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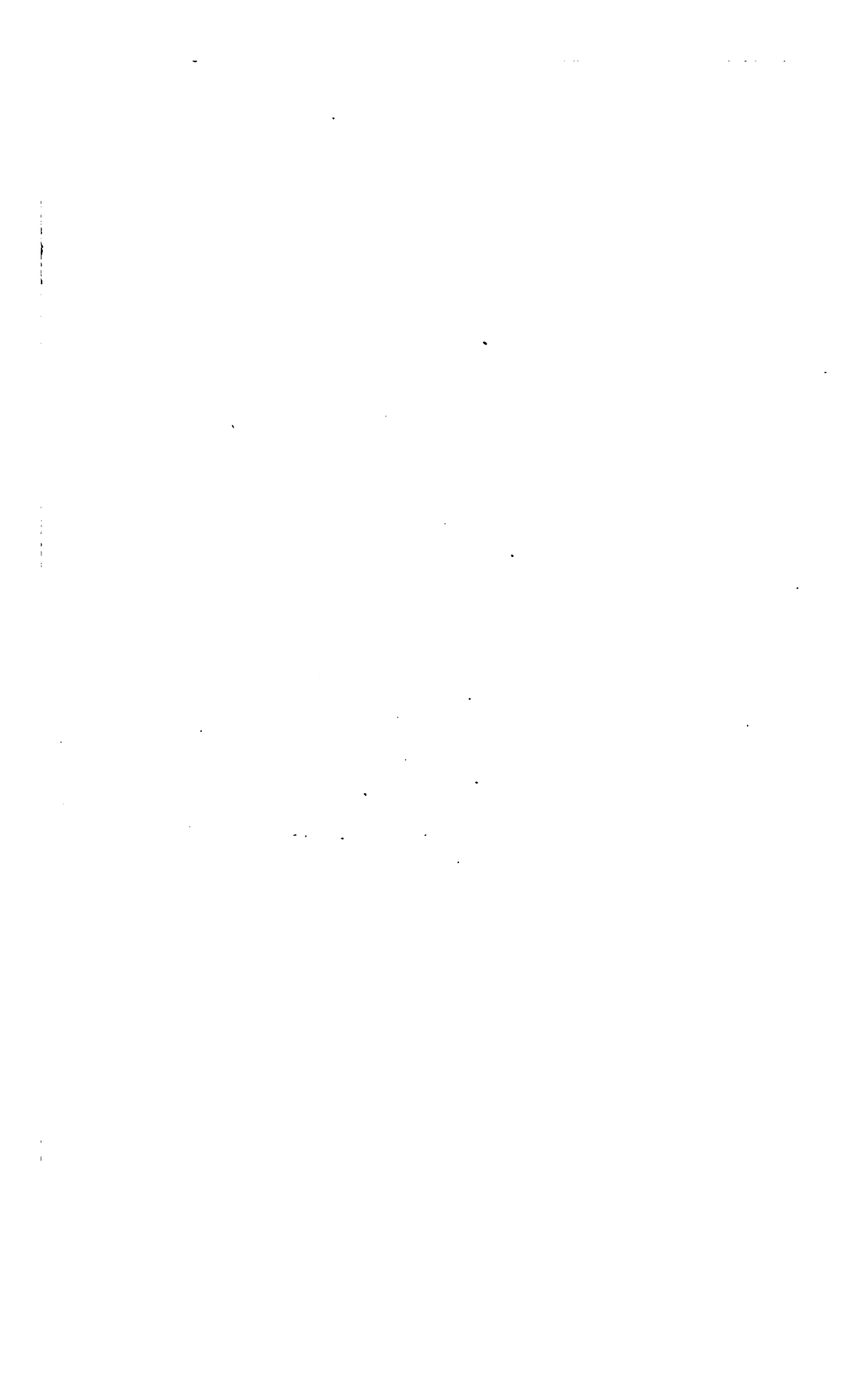


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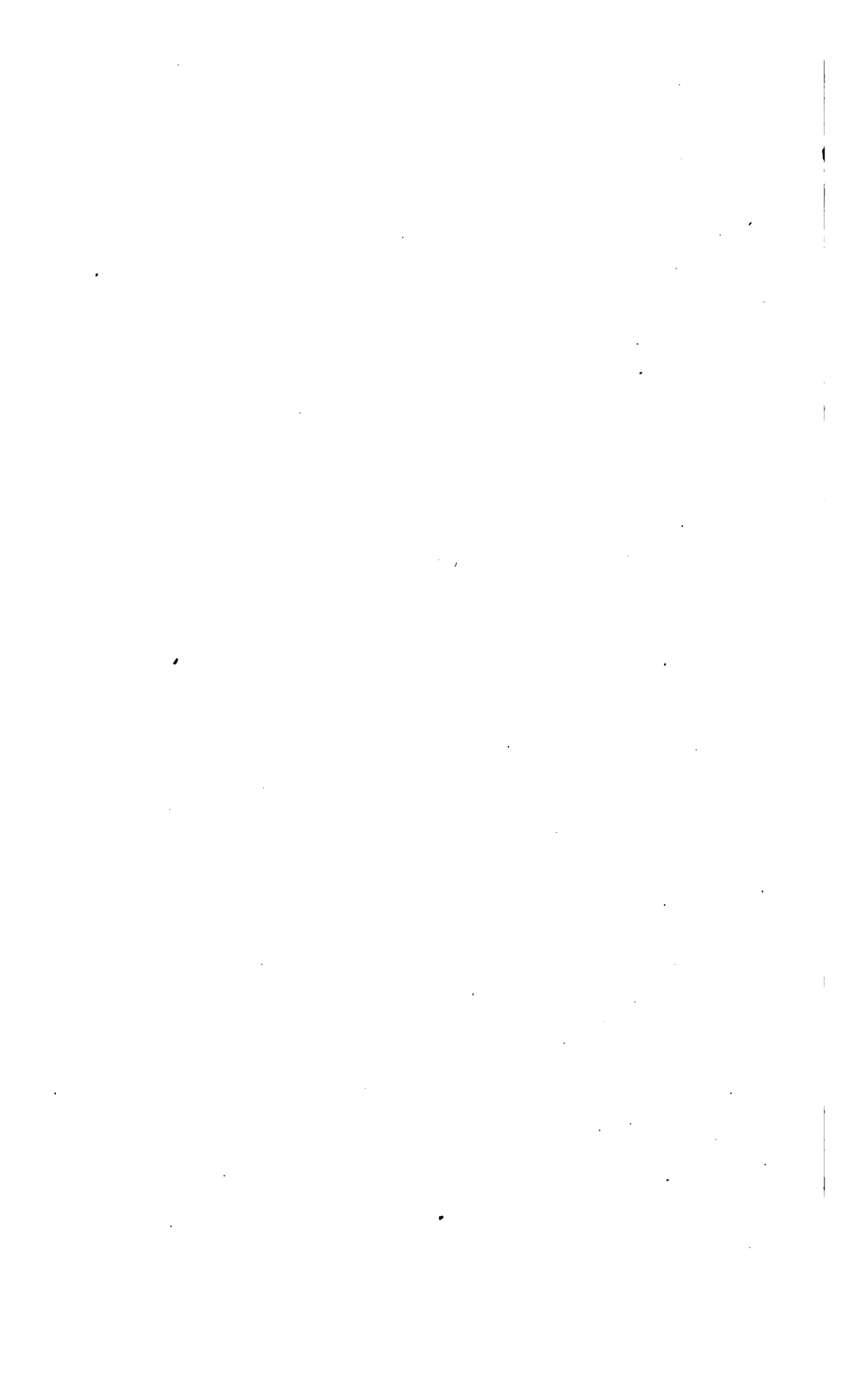
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HEARINGS

BEFORE THE

U.S.C.H.

COMMITTEE ON RAILWAYS AND CANALS

ON

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CONCURRENT RESOLUTION NO. 18

SURVEY FOR SHIP CANAL FROM
TOLEDO TO CHICAGO VIA
FORT WAYNE

1908

WASHINGTON
GOVERNMENT PRINTING OFFICE

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[House Concurrent Resolution No. 18, Sixtieth Congress, first session.]

CONCURRENT RESOLUTION.

Resolved by the House of Representatives (the Senate concurring), That the Secretary of War be, and he is hereby, authorized and directed to cause and complete surveys for a ship canal commencing at Toledo, Ohio, running thence to Fort Wayne, Ind.; thence to or near Chicago, Ill., with report of plans, specifications, and estimates of cost; said survey to be made by such officers or engineers as may be directed by the Secretary of War, and to be of suitable location and dimensions for military, naval, and commercial purposes.

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SURVEY FOR SHIP CANAL FROM TOLEDO TO CHICAGO VIA FORT WAYNE.

COMMITTEE ON RAILWAYS AND CANALS,
HOUSE OF REPRESENTATIVES,
Tuesday, April 28, 1908.

The committee met at 10 o'clock a. m., Hon. James H. Davidson, chairman, presiding.

The following gentlemen appeared before the committee: Messrs. Charles S. Bash, Perry Randall, and Frank B. Taylor, of Fort Wayne, Ind.; and Mr. H. R. Probasco, of Cincinnati, Ohio.

The CHAIRMAN. This is a hearing called at the request of Mr. Gilhams to consider concurrent resolution No. 18, introduced by himself, authorizing the survey of a ship canal from Toledo to Chicago via Fort Wayne, Ind. Mr. Gilhams will take charge of the hearings.

Mr. GILHAMS. Mr. Chairman and gentlemen of the committee, I want in advance to thank you for so kindly giving us this hearing on the Michigan and Erie Ship Canal, and I want to assure you that we are thoroughly interested in this canal, which fact I hope you will learn before you get through with the hearing.

I desire first to call Mr. Frank B. Taylor, whose father, Mr. Robert S. Taylor, has been a member of the Mississippi River Commission. Mr. Taylor is in the service of the Geological Survey.

STATEMENT OF MR. FRANK B. TAYLOR.

Mr. Chairman and gentlemen of the committee, the prosperity of the great Middle West, comprising twelve States and 26,000,000 people, and which may be said to be "The garden plot of the United States," raising one-half of the corn and three-fourths to four-fifths of all the staple products of the country excepting cotton and sugar, lies in the interior of the continent. All this section of our country has to carry on its commerce with our own Atlantic coast and with Europe almost entirely by rail. This long carry by rail from the coast to the interior, and vice versa, 500 to 1,500 miles each way, constitutes the burdensome "long haul," concerning which so much has been said in recent years.

It is well known that transportation by rail costs on the average about eight times as much as in large boats on deep waterways. The commerce of this great interior portion of our country is heavily burdened by the cost of this long haul by rail. This applies particularly to fuel and to raw materials of all kinds; in short, to nearly all the things which form the basis or foundation of manufacturing industries. The cost of the long haul by rail is a heavy burden. It is like a double tax, a tax on both imports and exports. Like Davy Crockett's gun, it "catches 'em both a-coming and a-going." The products of the Middle West must meet the products of the other

sections of the country in competition on equal terms, and in order to do this they are compelled in every transaction to take the price of the railroad long haul out of their profits. The only escape from this heavy handicap is by the construction of deep waterways from the Middle West to the sea. One of the greatest and most worthy objects of the present inland waterways agitation is the relief of our inland States from the burden of the long haul by rail. It is only by means of the most advantageous deep waterways from the Great Lakes to the sea, both south and east, that the Middle West can hope to continue its normal growth and prosperity.

Only two routes within the borders of the United States are possible for deep waterways to the sea, one from Chicago down the Mississippi River to the Gulf and the other from the Great Lakes to New York through the Erie Canal and the Hudson River.

While I do not wish to disparage in any way the great possibilities of traffic on a Lakes-to-Gulf deep waterway, it is nevertheless certainly true that the Middle West can not carry on its commerce with the Atlantic seaboard and with Europe as advantageously in that direction as by the east and west or Lakes-to-Hudson route.

As usually thought of, the east-and-west deep-water route would be complete if the Erie Canal were made into a ship canal. The route would then be through the Hudson River, the Erie Canal, Lake Erie, Lake Huron, and Lake Michigan to Chicago. But if such a waterway were finished, it would still be 400 miles longer than necessary, because as I shall endeavor to show you, there is a route for a deep waterway or ship canal from Lake Erie to Lake Michigan, which is feasible and which, if laid out on proper lines, will be sufficient for any development of commerce that we can now foresee.

The CHAIRMAN. What is the distance?

Mr. TAYLOR. The length of the canal on this line would be about 235 or 240 miles, according to the route taken. If the gentlemen of the committee will turn to this pamphlet and look at the map opposite page 9—

Mr. CHANEY. They could go down the Mississippi by way of that route or could go east?

Mr. TAYLOR. They could go either way. This map is intended to show the general relation of this canal to the north and south and also to the east and west main deep-water routes. It shows the proposed canal as a link, making a practically straight route to the Hudson River equal in length to the best all-rail route.

Mr. CHANEY. Does it follow the Maumee River from Fort Wayne?

Mr. TAYLOR. Yes, sir. In making choice of a route for this canal, we have gone carefully over the ground. We have found that the shortest distance between the two lakes is, as marked on this map, through southern Michigan from Toledo to Benton Harbor. There are other routes a little farther south, but they are somewhat longer.

The CHAIRMAN. I had those marked on the map in order to give the members a general idea of it. For the direct route to Benton, a bill has been introduced by Mr. Fornes, which is before this committee also.

Mr. TAYLOR. In looking for the best route for this canal there are three things to consider: (1) The water supply at the summit level; (2) the best place for the summit level; and (3) the length of the canal. The water supply at the summit level of the canal must be

large if the canal is to be a deep waterway or ship canal. We searched for the route which would give the longest, lowest summit level and the largest possible amount of water, and it seems to us that it is not so essential to have the shortest route as it is to get a large water supply and a low summit level. The lower the summit level the fewer the number of locks required, and locks are very costly to build and wasteful of time in operation. There are many advantages in the very long summit level which the proposed canal would have. Its length of 100 miles or more makes it possible to bring in more streams and a greater quantity of water at the summit than can possibly be obtained on the summit level of any other route in the region traversed. The proposed route goes up the Maumee River from Toledo to Fort Wayne. On the map facing page 12 the route is shown in somewhat more detail.

Mr. McDERMOTT. How wide is the Maumee?

Mr. TAYLOR. It is an ordinary river and you can wade its shallows in low water. The bed is 200 to 300 feet wide at Fort Wayne and is somewhat wider below Defiance.

Mr. McDERMOTT. It is full of yellow mud.

Mr. TAYLOR. Yes; but it is the St. Marys River that contributes most of the mud. The route then goes southwest from Fort Wayne through the old glacial outlet channel to Huntington. From this place it keeps on the high ground along the north side of the Wabash River to or nearly to the city of Wabash, where it turns northwest on a line directly toward Chicago.

The other routes which have been suggested pass farther north and are somewhat shorter. They are feasible for small canals, but not for a ship canal. It would not be impossible to get water enough for a ship canal on the summit level of any of these northern routes and they would require twice as many locks.

If you will look at the map you will see that the summit level can be carried across the whole stretch from a point a little east of Fort Wayne to near Lake Maxinkuckee, and the whole area surrounded by the outside feathered line can be drained into it. This area is about 8,000 square miles. None of the other routes farther north, though shorter, can get the drainage from much more than one-tenth as much area. The larger area comprises a number of rivers of good size, a large number of lakes, and many favorable sites for artificial reservoirs. Fort Wayne is in the lowest gap in the southern or western rim of Lake Erie. If you go north from Fort Wayne you rise to higher ground, to 950 feet or 1,000 feet above sea level, whereas at Fort Wayne the divide is only 760 feet. Having brought the canal up to Fort Wayne, the question arises as to whether it shall be carried by way of Huntington and Wabash to Lake Maxinkuckee without any locks, making the summit level over 100 miles long, or whether it shall be carried northwest from Fort Wayne over a broad ridge more than 100 feet higher, requiring nearly twice as many locks and securing a much smaller supply of water.

Information of the most reliable sort as to the details of the country along the proposed route was obtained from Mr. Frank Leverett, of Ann Arbor, Mich., before whom the project was laid soon after the first meeting in Fort Wayne. As a geologist of the United States Geological Survey he has studied the topography and drift of northern Indiana and Ohio in much detail, having examined every town-

ship of the region on foot and collected records of all the deeper wells, showing the depth and character of the drift. Mr. Leverett expressed himself as confident not only of the feasibility of construction on the proposed route, but expressed equal confidence in the availability of a sufficient water supply for the summit level to make the canal entirely adequate to the needs of commerce.

The summit level of the canal can begin at Fort Wayne and be carried to Lake Maxinkuckee without a lock.

The CHAIRMAN. What is the distance?

Mr. TAYLOR. It is 100 or 110 miles, and its altitude above sea level is about 750 feet. At the bottom of this map you will notice the profile. It shows a summit level of great length, which would enable the canal to get the water of a large number of streams, and largely increase the capacity of the canal to do business. The capacity of a canal for business is necessarily limited by the amount of water available at its summit level. For this reason the summit level of this canal is designed to be as low as possible and as long as possible.

Mr. BURTON. Where is the long summit level?

Mr. TAYLOR. It begins east of Fort Wayne. Of course, the exact place it should begin is a question to be decided by engineers. These figures are only approximate. It runs west to a place marked "West Lock" on the map. This is just south of Lake Maxinkuckee. At this point it begins to descend toward the west, and after running for a considerable distance at a level of 680 feet makes a rapid descent by three or four locks to the level of Lake Michigan.

Mr. McDERMOTT. There will be about twenty locks?

Mr. TAYLOR. Yes, sir.

Mr. BURTON. Is it supposed that the rivers would supply a sufficient quantity of water?

Mr. TAYLOR. I have data on that point from Mr. M. O. Leighton, chief of the hydrographic division of the United States Geological Survey. The first time I wrote him we were considering a canal of 14 feet depth, and he answered on that supposition. He said there are five streams which would furnish about 654 cubic feet of water per second at low stage and that 490 cubic feet per second is enough to operate a lock 348 feet long, 69 feet wide, and 16 feet deep (which is suited to a canal of this depth), one hundred times a day without resorting to storage.

Mr. HARDY. That would be more than you would need.

Mr. TAYLOR. Yes, sir; for a 14-foot canal. But I believed that this would ultimately become a greater canal. When Mr. Leverett went over the project he found that the lay of the land was favorable for bringing a large feeder down to the summit level at Lake Maxinkuckee from South Bend and Elkhart. The largest source of water supply would be from the St. Joseph and Elkhart rivers. It was also found that the Wabash and the Salamonie rivers and also the Mississinewa River could be drawn upon. Taking all these together, we could have as a maximum supply at low water, without reservoirs, about 2,500 cubic feet of water per second, and we found that that would be more than enough to operate the biggest lock at the Soo 100 times per day. Colonel Davis's report on the traffic through the Soo locks for 1906 shows that all three of the great locks taken together were operated in the busiest time only about 110 times a day.

Mr. HARDY. How long does it take to operate a lock one time?

Mr. TAYLOR. Theoretically it takes from ten to twelve minutes, but it really requires twenty-five to thirty minutes—mainly because of the slow movements of the large boats.

Mr. CHANEY. At the Soo it is about twenty-two minutes.

Mr. HARDY. Then they could not get 100 operations per day.

Mr. TAYLOR. I think the best locks to-day are operated quicker. Besides, two locks could be put in at each place if necessary.

Mr. WHEELER. The locks at the Soo are larger.

Mr. TAYLOR. I think not.

Mr. WHEELER. Are they not 800 feet by 100 feet?

Mr. TAYLOR. Yes, sir. I misunderstood your question. It may be that we will need a canal 21 feet deep—

Mr. HARDY. You want the biggest thing possible.

Mr. TAYLOR. It seems to me that this canal will at some time in the future need to be of large capacity. I think that all of our principal canals in the Great Lake region ought to be standardized. They ought to be of one depth from Chicago and Duluth to New York.

Mr. HARDY. Is not 14 feet the depth of the ship canal from Chicago to St. Louis?

Mr. TAYLOR. According to Mr. Cooley, of Chicago, the latest idea is to make it 18 feet. The Chicago Drainage Canal is 24 feet.

Mr. WHEELER. What is the depth of the Erie Canal?

Mr. TAYLOR. It is 7 feet deep, and they are now making it 12 feet deep. Many people are strongly urging that the Erie Canal should be made 21 feet deep. The present work is now being done, I believe, by the State of New York, unaided by the Government.

Mr. BURTON. In getting that depth of water at the summit level would it interfere with any water rights?

Mr. TAYLOR. It might interfere with some water rights on the St. Joseph River and on the Elkhart River. I imagine that such an undertaking would be rather difficult for a State or a corporation, but the National Government could afford to compensate those people when their rights were taken. The largest water rights are at Buchanan, in Michigan. This place is a little below Niles. They rely on the water of the St. Joseph and the Elkhart rivers. Indiana, I imagine, would have trouble in taking the water supply from a power plant located in Michigan.

Mr. HARDY. The power would still be there?

Mr. TAYLOR. Yes, sir; the canal would not affect the power except at low water.

Mr. CHANEY. They could build reservoirs which would effectually meet the difficulty?

Mr. TAYLOR. I think so.

Mr. GILHAMS. They could not get water below South Bend?

Mr. TAYLOR. No, sir; that is too low for the canal. The river bed is 40 feet below the level of the town. The feeder would be about 30 feet above the level of the city. This water power in the vicinity of South Bend would be much more advantageous if taken out of the canal feeder above the city, where it would have a fall of 60 or 70 feet in returning to the bed of the river. The power company could almost afford to move their plant to South Bend and take their water out of the canal feeder. It would be a great advantage to them.

On this map you will notice that one route was proposed to go from Defiance directly across to Michigan City. You will notice also a small area marked by a dotted line. This shows the area which can be drained into the summit level on that route, and it is very small as compared with the area drained on the proposed route. A great ridge or glacial moraine runs from Logansport, Ind., far northeast into Michigan. If a canal were carried over this hill, which is 100 to 200 feet higher than the summit at Fort Wayne, it would have to depend entirely on reservoirs for its water, and not, as we would do in this canal, on the streams. They would have to depend on reservoirs the whole season through. On our plan the reservoirs would be only an auxiliary supply, to be used in dry seasons.

Mr. HARDY. You would have 100 or 110 miles of summit level, and that would be the first reservoir?

Mr. TAYLOR. Yes, sir; that is another good point. If you made the feeders from South Bend and from the Salamonie at summit level, which would make them navigable for commerce, it would double the reservoir capacity of the long summit level.

Mr. CHANEY. Which is the old Wabash on your map?

Mr. TAYLOR. It follows the Wabash River from Huntington down. They had the old "16-mile level" for their summit.

Mr. BURTON. You speak of the streams being made navigable. Do you mean that the feeders would be navigable?

Mr. TAYLOR. They could be made so.

Mr. HARDY. These would be at the summit level.

Mr. TAYLOR. Yes. These long feeders ought to be made navigable and at the summit level.

Mr. HARDY. Their advantage would be that they would afford you a greater water supply.

Mr. TAYLOR. Yes, sir. Of course, to a large extent, the summit level is equivalent to a reservoir. It has the same effect for lockage. A few operations would not affect the level of the water.

In the area draining into the summit level there are a large number of lakes. An ordinary map on a large scale shows about 100 lakes, and Prof. Charles R. Dryer, who surveyed six counties in the northeastern corner of the State for the State geologist in 1886, says that, counting large and small, there are probably 1,000 lakes, and there are probably half or two-thirds as many more in southern Michigan available through the rivers which have been mentioned. All these lakes can be raised so as to become magnificent reservoirs.

The other routes suggested do not afford any such possibilities. There is no possibility of getting any such water supply as this. There is no obstacle to building them through Michigan or Indiana, but you can not get water enough for them. The route here proposed carries the summit level across the country so as to capture the Tippecanoe, Eel, and other rivers, and obtain the largest water supply that can be obtained by any canal in this region.

I have been over this subject with Mr. Leverett and with Mr. L. E. Cooley, the well-known engineer of the Chicago Drainage and Ship Canal and a member of the United States Deep Water Ways Commission. Mr. Cooley expressed himself as much pleased with the project. I have also discussed it with many others, and none have discovered any way by which a better water supply can be obtained.

It seems to me that this ship canal has got to come. We can not foresee what is going to happen; that is shown by the history of the Soo Canal. The proposition was at first laughed at. Henry Clay said it was a visionary scheme and like building a railroad to the moon. It was finally built. When General Poe came into control, he built locks still larger than those which were then in existence, and he said that the regret of his life was that he did not make the locks with a depth of 24 or 25 feet instead of 18 feet. The Poe lock at Sault Ste. Marie is 800 feet long, 100 feet wide, and 21 feet deep on the miter sill. The large new Canadian lock is 900 feet long, 60 feet wide, and 21 feet deep. United States engineers are said to be now planning to build a new lock 1,300 feet long, 80 feet wide, and 24 feet deep.

Mr. BIRDSALL. What products would go through the proposed canal?

Mr. TAYLOR. All kinds of bulky product and all kinds of heavy low freights; everything going in large bulk where speed is not required, such as hay, grain, ore, stone, brick, cement, and lumber.

Mr. BIRDSALL. They could not get more than a small portion of the freight from the port of Chicago.

Mr. TAYLOR. I do not suppose that they would expect to get it all. The route through Mackinac would still be open, and ships steaming under their own power might use this route. Freight vessels do not go at high speed. They only make 10 to 13 miles an hour; only one on the Lakes makes 15 miles an hour at the present time. If we had 21 feet of water in this canal large barges and fleets of barges could be used. They do not go at high speed. They could go as fast through the canal as they do now in the open lake.

We are looking forward to a system of inland waterways which is eventually to be built. The most effective method of transportation will then be the fleet of barges, in which each barge will be much larger than those we have now. This is one reason why the canals should be standardized.

Mr. HARDY. It occurred to me that the summit level might be continued as far as South Bend, which is only a short distance.

Mr. TAYLOR. I should think that that would come in the course of time. It is not feasible to suggest it at the present time, because it involves 40 miles more construction and makes the distance from Toledo to Chicago much longer than it need be.

Mr. HARDY. I thought the purpose would be to construct that anyway, because when you have finished your project you need 40 miles more of feeder.

Mr. TAYLOR. Yes, sir; but one would hardly expect a feeder to be made as deep as the main canal.

Mr. HARDY. The other is a more direct route.

Mr. TAYLOR. That is true.

Mr. McDERMOTT. How many miles is it from the city of Wabash to the Michigan State line?

Mr. TAYLOR. Probably 60 or 65 miles.

Mr. WHEELER. How many miles per hour would a steamer make, with reasonable safety to the banks, in a canal of this kind?

Mr. TAYLOR. In a large ship canal they make 5 or 6 miles an hour.

Mr. WHEELER. Could that be done and not wash the banks?

Mr. TAYLOR. The canal would have to be 200 or 300 feet wide. In the Suez Canal they used to allow a speed of 6 miles an hour, and

recently they have enlarged it, and now they allow a speed of 7 miles an hour.

The CHAIRMAN. What are the facts with respect to the old Wabash and Erie Canal? Could that canal be utilized?

Mr. TAYLOR. It could be, but it would be of very little use. It is only from 5 to 7 feet deep. From Toledo to Defiance it is now in use and is in pretty good condition.

The CHAIRMAN. What are the dimensions of that canal now to Defiance?

Mr. TAYLOR. It is about 7 feet deep and 50 feet wide.

Mr. ANSBERRY. Your idea is that the Maumee River is to be used as a canal?

Mr. TAYLOR. Yes, sir. That is what Mr. Cooley advised; but if the engineers should decide that it is easier to make an independent canal, that can be done.

The CHAIRMAN. That is a feature that will have to be taken up with the engineers. What we really desire on this subject is the commercial possibilities of this canal and the commerce to be carried from Chicago.

Mr. TAYLOR. Mr. Bash will give you that. When an inland canal system is once developed in this country on such plans as are now contemplated by the States and the United States Government, the number of canal barges which will be going through the various canals will be so great that it will become an important object to avoid open lake traffic for these boats wherever possible. It will be desirable to have canal routes by which it will not be necessary to go through the open lakes, exposed to the dangers of storms.

Mr. KNAPP. What would your idea be in respect to the depth of water for the Niagara Canal as compared with your scheme?

Mr. TAYLOR. I should think it ought to be the same depth. There is water enough and the route is feasible.

I want to call your attention to the main obstacle to be overcome if the route follows the direct line shown on the map. The line runs from the city of Wabash straight northwest toward Chicago. I believe that would be the line which the engineers would finally decide upon. On the map you will notice there are dotted lines between Roann and Rochester marked "A," "B," and "C." At that place there is a great glacial moraine or ridge, which must be cut through, or else avoided by going around. It is all clay; there is no rock. This is proved by many well records which have been carefully studied in that vicinity.

The only sections of the canal that present anything difficult in construction are two localities where the most desirable route would require rather deep cutting. Both of these, however, would be entirely in clay drift, with no rock cutting whatever, and would be a simple problem for steam shovels. The most formidable cut would be through the big drift ridge between Roann and Rochester. Here, for a distance of 5 or 6 miles, the ridge has an altitude of about 850 feet, requiring a cut about 100 feet deep. For 6 or 8 miles more the cutting would be 50 feet or less in depth, about two-thirds of it less than 25 feet. This is what would be required if the canal were built on the shortest possible route for a ship canal from Fort Wayne to Chicago. But it can be conducted around this hill, if desired, by a

longer route, so as to reduce the depth and length of the deep cut, or even avoiding deep cutting entirely.

Mr. McDERMOTT. What is the cost of this proposed canal?

Mr. TAYLOR. I have not made an estimate. That is what we want a survey to determine.

Mr. HARDY. Your investigation has been confined to the feasibility of making a canal and the utilization of it?

Mr. TAYLOR. It has been confined to the general feasibility of the route and to ascertaining the physical features of the country, such as the altitudes, the available water supply, and the composition of the ground. Those were the three things I have endeavored to learn. The deep cut between Roann and Rochester may seem rather formidable. But at Omaha, Nebr., the Union Pacific Railroad Company has made a cut which is 100 feet deep and about 1 mile long, simply for the convenience of getting trains in and out quickly. If a corporation like a railroad company can do that, surely the National Government can do a similar thing for a ship canal. There is some rock in the rapids of the Maumee River above the town of Maumee. It is mainly in the bed of the river and can be avoided by going around the rapids. In the rest of the river above the rapids there is very little rock. There is also a little rock between Huntington and Wabash, but it does not rise above the intended level of the water in the canal, so there is no serious obstacle from that source.

Mr. HARDY. You speak of transportation by waterway being eight times cheaper than transportation by rail. What is the relative cost of transportation by rail as compared with the ordinary 7-foot canal?

Mr. TAYLOR. It is a little less by canal.

Mr. HARDY. It has been stated that transportation in a limited canal is cheaper.

Mr. TAYLOR. Indeed it is. The Erie Canal has a depth of only 7 feet, and its boats have a carrying capacity of only about 100 tons each, and yet the tonnage of that canal was equivalent to 150,000 railroad carloads last year.

The CHAIRMAN. The estimated rate on the Erie Canal, where it is proposed to have 12 to 14 feet of water and to have 2,000-ton barges, will be 0.52 of a mill per ton per mile.

Mr. HARDY. In a hearing before the Committee on Interstate and Foreign Commerce it was claimed by some one that in case of the smaller barges transportation was cheaper by rail than by those barges.

Mr. TAYLOR. I should think that the history of the Erie Canal would disprove that.

Mr. WHEELER. The shallow canals of New York beat the railroads right along. The question was asked by some one as to the rate from Chicago to Toledo by an all-lake route. As I understand it, the great advantage of this canal would be in the advantage it would afford of transportation through this great interior country.

Mr. TAYLOR. Yes, sir.

Mr. WHEELER. And it was stated that you did not expect to get transportation from Chicago through this route very much cheaper, but that the great advantage would be the accommodations of that great section of the Middle West.

Mr. TAYLOR. It would affect all the commerce between the East and the West by making the distance between Chicago and Lake

Erie 400 miles shorter than it is now. This saving of distance would affect all commerce between Chicago or any point west of Chicago and Toledo or any point east of Toledo, including all points on Lake Erie or near it, all of the Atlantic coast States, and Europe. The local benefits are—

Mr. BURTON. It would be of great local advantage to all of that section.

Mr. TAYLOR. Yes; but it would be of special advantage to the whole of the northwestern section of the country—all of that great section west and northwest of Chicago. This is what I wish particularly to emphasize. It is not for the local advantages to the people of Indiana that we are urging the building of this canal; the local benefits are obvious enough and would hardly justify the building of a ship canal. It is for national commerce that this canal should be built—for the purpose of giving the great interior section of our country the cheapest possible east-and-west route for transportation, and this is a thing which can not be done except on deep water.

Another advantage of the proposed route would be shorter season of ice. This route would be closed by ice only about half as long as the Straits of Mackinac. The average number of days the Straits of Mackinac are closed is one hundred and five, while at Chicago it is only fifty-one days. But Lake Erie ports are closed a little longer.

Mr. BURTON. What makes that difference?

Mr. TAYLOR. The climate makes it. I had a letter the other day from Mackinac Island in which it was stated that the first boat to pass through was on the 19th of April. If this canal had been opened to Chicago, it would have been going three weeks before that. Those two periods of two or three weeks in spring and fall are the most dangerous times of navigation on the Great Lakes, and it is the time of the greatest loss of life and property. Many shipowners hesitate to take a cargo at those times and insurance companies sometime refuse to underwrite a cargo on account of the danger.

Mr. BIRDSALL. You are not an engineer?

Mr. TAYLOR. No, sir.

Mr. BIRDSALL. You could not make an estimate of the cost?

Mr. TAYLOR. Nothing but a guess, and you could do that as well as I.

Mr. BIRDSALL. What would be the cost of a survey?

Mr. TAYLOR. It would depend entirely on how thoroughly the different routes were covered. It would not cost so much if it were confined to this route.

It seems to me that our request here for an appropriation for a survey ought to receive serious consideration, because the Government has already surveyed the whole deep-water route from Chicago to the Gulf, and the State of New York has resurveyed the Erie Canal from the Hudson River to Lake Erie, and the only part of either one of the two great deep-water routes from Chicago to the sea now remaining unsurveyed is this short-cut ship canal from Toledo to Chicago, the claims of which we are here to lay before you. This is an indispensable link in the great east-and-west deep-water route of the future, and it is the most important part for the Middle West yet remaining to be surveyed. The people of the Middle West are hoping for the adoption of a general policy of inland waterway improve-

ment. It was suggested to me some time ago that this project of ours ought not to be advanced ahead of the adoption of the general policy. It was said that the Government ought to take up the general policy first. I should think that that was wise in a general way; but New York is now making a new Erie Canal. The Government has surveyed the canal from Chicago to St. Louis and has authorized and appropriated the money to survey a deep canal from St. Louis to Cairo. It seems to me that the project here presented is so important a link in the main east-and-west route that the survey of it ought to be provided for now without waiting for the general policy. It will be easily incorporated into the larger plan of the Government whenever the general policy is adopted.

The CHAIRMAN. Don't you think that some of those are in a different class? Some of those are propositions for improvements of existing waterways. The question is whether new routes should be undertaken or whether the existing improvements be carried on.

Mr. TAYLOR. Yes; that is true; but I think that the main east and west route, which is the most important of all for the Middle-West, ought to receive early consideration. I think there can be no doubt as to what the future policy will be. Great canals will be built, and canal building is a slow job. These canals will all be sorely needed long before we can build them. They are needed now. There could not be any mistake made by authorizing a survey of the proposed canal.

The CHAIRMAN. We are now facing several projects which this great desire for waterway improvement has brought forward. In addition to this there is one for Lake Superior and Lake Michigan, and one across to St. Louis. There is one proposed from Boston to Cape Cod, and there is the Atlantic coast canal from Boston to Florida, and there is a project for one across Florida. There is another from the Tennessee to the Ocmulgee. All of these, if carried out, would require quite an increase in the funds of the Treasury.

Mr. TAYLOR. We are only asking for a survey at the present time. I think that with the exception of the deep waterway from the Lakes to the Gulf and the Erie Canal in New York the Toledo, Fort Wayne and Chicago canal is the most important one that has been proposed. It will add an increment of prosperity to a greater number of the people of the United States than any other canal suggested and which has not already been surveyed. In their St. Lawrence canals, and especially in their splendid Ottawa River canal route, the Canadians have far better canal routes from the Great Lakes to the sea than we have. From Chicago to tide water at Montreal by way of Mackinac Straits and the Ottawa River route the distance is only 20 miles farther than from Chicago to Buffalo by the present water route, and Buffalo is still 445 miles from New York City. The proposed canal is in effect an extension of the Erie Canal of New York State westward to Chicago. If the future trade of the Middle West is to pass in and out through the gates of New York rather than through the gates of Montreal, the Erie Canal and the Toledo-to-Chicago canal here proposed must both be made into deep waterways of the best type.

Mr. GILHAMS. We have before us this morning a gentleman who is a railroad promoter and a lawyer, and is now interested in promoting a railroad from Fort Wayne to South Bend. He is also interested in the construction of canals. I will introduce Mr. Perry A. Randall.

STATEMENT OF MR. PERRY A. RANDALL

Mr. Chairman and gentlemen of the committee, I want to say as to the question propounded by the chairman of the committee that there are a good many projects before you for the survey of canals, and I want to say that it is very proper that they should be before you, and I also think that it is proper that you should give consideration to them and that you should recommend appropriations for their survey.

If there is anything Congress should do it is to help this country to a better transportation system. Unless it can be done pretty soon we will have a complete paralysis of all of the commercial business in this country.

I believe that statistics show that railroad transportation has been increasing at the rate of 100 per cent every ten years for the last fifty years. Statistics also show that the means of doing this transportation business has kept pace with the growth of the business until the last decade. For the last decade, however, it is shown that the business has increased 126 per cent, while the means of doing the business has increased a little less than 22 per cent. Is there any reason for you gentlemen to believe that within the next ten years it will show any greater increase than it has in the last ten years? Is there any reason to believe that the means of doing that business will increase as much as it has during the last ten years?

Now, I think I know something about this question. I have been in business where I have had to have shipping done, and I know how we have handled that by reason of the insufficient means of doing business. You know it by hearsay, if you do not know it by actual experience.

You know that there has been great suffering all over this country. You know that in the Northwest people have been frozen to death because they could not get coal, and they have burned fences from around their property to keep themselves from freezing. The grain and the fruit has rotted on the roadside because farmers did not get cars and locomotives to make the shippings.

The National Association of Rivers and Harbors has asked for \$150,000,000 for the purpose of supplying this deficiency. The losses have been \$50,000,000 worth per year.

I want to speak of this favorite location in which we are at Fort Wayne with railroads and terminals. This is a division point where we have been unable to get cars and have to wait for weeks and months to get cars to ship a carload of lumber.

Mr. James J. Hill says, and I believe that he ought to be pretty good authority, that it will require seven and one-half billions of dollars to put the railroads in condition to do the business of this country for the next five years. He did not hazard to guess on what it would be for five years longer.

The capitalization and bonded indebtedness of all these roads of the country is now \$15,000,000,000. Will you tell me where you are going to get seven and one-half billions of dollars to put into railroad construction and railroad building for the next five years? It can not be done. You are not going to get so much money for locomotives and railroad construction and terminals in the next five or ten years as you did in the last ten years. I want to ask you gentlemen if we are going to be hampered by this sort of thing in this country.

I understand that Congress is going to appropriate 70 per cent of the revenues of the Government for the purposes of past wars and wars to come. The wars of the future are not going to be fought by gunboats and battle ships and by shrapnel. The wars to come are going to be commercial wars, and we have got to be prepared to enter into that conflict.

Mr. CHANEY. Then you are not in favor of battle ships?

Mr. RANDALL. No; not until we have some canals. Unless you can improve your waterways and unless you can better the transportation of this country you will suffer insufferably more in the next ten years than through war with Japan or any other country.

"Why," some of us say, "we are a great nation." We have got our heads swelled and we are blustering about to show what a "bully boy" we are. We are trying to show what a goody-goody kind of people we are. We are building the Panama Canal; and I state here that if we build this canal which is in the proposition before you 21 feet deep it would be worth one hundred times more to this country than would the Panama Canal.

Gentlemen, we must have some relief. How are we going to get it? We have immense and magnificent streams. We have the finest opportunities of making canals of any country in the world.

Mr. HARDY. How do they compare with those of France?

Mr. RANDALL. They are much better. France has spent, since 1814, \$750,000,000 for canals; and I understand that this Government, since its birth, has spent less than \$500,000,000 for canals and harbor improvement.

Mr. HARDY. Do you know what proportion of the trade of France is carried on by the waterways or canals?

Mr. RANDALL. No, sir; I do not, but I do know that you can load a barge in any part of France and take it to any other part of France.

Mr. HARDY. It can be taken clear across France.

Mr. RANDALL. Yes, sir; in any direction. I know that we have let all of our canals and rivers go without any improvements whatsoever.

Gentlemen, there is another feature about which I want to speak, and I think it is insurmountable on the part of the railroads. I believe that the railroads have gone to their limit in the matter of handling heavy, bulky freight. I believe that the great difficulty with the railroads to-day is the want of terminals. The railroads can build the tracks, can get the locomotives, and can probably get cars, but how in heaven's name are they going to get terminals on which to handle their cars. In the town in which I live we have railroad yards. A few years ago they said it would be sufficient for fifty years to come, and yet I have been six weeks in getting a car out of that yard. I never get a car in less than six weeks' time.

Mr. BURTON. Was that a car for loading or was it a car that you were receiving?

Mr. RANDALL. I mean that the freight remained in the yard for six weeks. Why? The railroad cars stand as a heavy dead weight upon the tracks. You have to move a whole train of cars to get out two or three that you may want. That is the situation. I was told that a gentleman had shipped from Grand Rapids, Mich., a carload of freight. He had hoped to find it, and finally he went to Grand Rapids, 115 miles away, and walked the whole distance. He finally came to Fort Wayne and found it in the yards there.

Last summer I got five carloads of goods from Petoskey, Mich., a distance of 360 miles away. I wanted the material to put into some houses that I was building. I started to work after I had ordered the lumber. I found that I could not get the lumber, and I went to a local dealer and bought the lumber, and I had the house built and the family living in it before I received that order of lumber. It took four weeks to get the cars with which to ship it, and I was four weeks in getting it. That is 360 miles on a direct line from Grand Rapids to Fort Wayne.

The CHAIRMAN. Are the railroads laboring to cure that state of affairs?

Mr. RANDALL. The railroads are doing the best they can. The trouble is with the terminals. I read an article in the paper last fall which gave an idea of the time it takes to load a vessel. A vessel was loaded at Superior, Wis., with 10,000 tons of cargo in ninety minutes. That was two hours and twenty minutes from the time it came into the harbor until it steamed out on its return trip with its 10,000 tons of freight, and the harbor-master told me that they would unload that in Toledo in six hours. Do you know the size of that cargo? That cargo would have filled 400 cars, and those cars would have made, with 40 cars to the train, 10 trains, and these 10 trains with the locomotives would have made a string of trains solidly together a distance of 5 miles in length.

Now, if you had undertaken to load that same cargo into those cars and allowing ten minutes to a car, it would have taken four thousand minutes to have loaded that cargo into cars. That is six hundred minutes, counting ten hours to a working day. It would have taken seven days to have loaded that cargo into railroad cars. It would have taken the same time to have unloaded it. Now, that is the situation.

The railroad men themselves are thoroughly frightened at the question of terminals. We have marveled why the Pennsylvania Railroad went under the river to get into the city of New York with its tunnels, and yet I saw a statement in the paper the other day by a writer who was speaking of this question, and he said that the cost of that tunnel work under the river was only about one-tenth of what it would have cost on the surface in New York City.

There are in the city of Chicago 800 miles of main tracks, and there are 1,400 miles of auxiliary tracks. The appraised value of the real estate on the main line is \$144,000 per mile. The main and the auxiliary tracks in Chicago have cost at the present price over \$600,000,000, and yet if they had to duplicate that trackage to-day it would cost ten times that.

(Thereupon, at 11.30 a. m., the committee took a recess until 1.30 p. m.)

AFTER RECESS.

The committee met pursuant to adjournment.

STATEMENT OF MR. PERRY A. RANDALL, FORT WAYNE, IND.— Continued.

Mr. RANDALL. I was saying just before we adjourned that there were 800 miles of main track in the city of Chicago and 1,400 miles of auxiliary track. At the present valuation of real estate in Chicago

those 800 miles are valued at \$144,000 per mile, and adding to that the auxiliary tracks we have in Chicago rights of way and auxiliary tracks valued at over \$600,000,000.

In talking the other day to a gentleman who is high in railway circles about the possibility of the railroads getting the money to handle the traffic of the country, he said: "The question that is now troubling the railroads more than any other is the question of terminals." He referred to the right of way and tracks in Chicago, and then said to me that "the Chicago and Milwaukee Railroad Company have had a jury sitting for six months trying to figure out an additional right of way through the city." He also told me that the Chicago and Northwestern road had recently made purchases in Chicago, not in the business district, but on the north of the river, and the prices they had paid figured the right of way at over \$6,000,000 a mile, and he said that if the railroads entering Chicago had to duplicate the right of way which they will some time have to do it, would cost them at least 10 times what their present property is worth.

The CHAIRMAN. The property that the Northwestern is acquiring is for a new passenger station?

Mr. RANDALL. Yes, sir. There is 80 feet square that they paid \$50,000 for and 2,800 square feet that they paid \$365,000 for. That may be too high a price to put upon the right of way for terminals, but I talked with a gentleman some time ago who told me that he was a member of a syndicate that was thinking about building a line of road from New York to Chicago, and he said after a year's investigation they found that the right of way in New York alone for their terminals would cost \$150,000 a mile for the entire road, and that without putting any money into the construction of the road at all.

Mr. BURTON. Do you mean \$150,000 for the length of the road from New York to Chicago?

Mr. RANDALL. Yes, sir; from New York to Chicago, the length of the road.

The CHAIRMAN. I remember seeing a statement that it would cost more to acquire the terminals in New York than to build the road from New York to Chicago.

Mr. RANDALL. This gentleman told me it figured \$150,000 a mile for the entire road, and he told me that he was a member of that syndicate and that the syndicate was dropped. He told me further that the only thing this country could do was to go to the waterways; that he believed the question of terminals was such that the railways were out of date.

I do not want to enlarge upon those matters. I simply want to say that it seems to me it is a condition that confronts us; it is not a theory. The railroads have shown in the last three years of prosperity that they could not do the business of the country, and each year of prosperity will put them still further "out of the running." What, then, are we to do? We have, as I said before, the finest opportunities of any country in the world to make waterways by the improvement of our rivers and by the making of canals, and are we now going to say we will not do it? I do not believe that Congress can do a thing that will please the people better and that will do more good for the country than to make appropriations for the survey of every stream that people ask to have surveyed in order to put them

in the position where they will know what they ought to do when the time comes to do it. It looks to me as though we ought to make haste in the matter. It looks to me as though a calamity is confronting us, and I say this as a man who has had a great deal to do with transportation and knows of the difficulties that we are laboring under.

I want to say just a word in reference to this canal. This is not a local affair, as the chairman seems to think. It is not to be built simply to accommodate northern Indiana, southern Michigan, and a part of Ohio. This canal, if built, will be of national importance. Mind you, the Canadians are warm rivals on this subject of canals. They have a 34-foot waterway from the ocean to Montreal and ocean vessels are constantly coming there. When the Georgian Bay is made 21 feet deep, as it will be within the next two or three years, a vessel going from Chicago will not pass down through Lake Huron and down Lake Erie to go to New York even if the Erie canal is made a 21-foot canal, because it will be as near to Montreal from Chicago through this Georgian Bay canal as it will be to Buffalo, and when they are at Buffalo they are 436 miles yet from tidewater at New York.

Mr. BURTON. Where is Buffalo on that map?

Mr. RANDALL. Here [indicating on map]. Not only that, but when they are at Montreal they are 340 miles nearer Liverpool than New York is. In other words, with a ship canal from Buffalo to New York through the Erie canal and with the Georgian Bay canal made, vessels starting from Chicago will be 770 miles nearer to Liverpool by going by the way of Montreal than they will by the way of Buffalo, swinging around this circle and up through Lake Erie. The only way you can cut off that distance, the only way you can equalize the distance between New York and Chicago with that from Montreal to Chicago is to make the 400 miles cut-off we are proposing by this canal.

Mr. TAYLOR. There are three Canadian canals. It happens that I have been there and have seen two of them myself, and the northern one shown on this map is the most important one. That is the one that gives the short distance. The canal route is the best one. It is naturally the best, and there is an immense supply of water. There is only 29 miles of construction needed to make the canal good.

Mr. BURTON. That is Toledo on the right there and at the other end of the line is Michigan City?

Mr. RANDALL. Yes, sir.

The CHAIRMAN. Benton Harbor, that is the proposed route?

Mr. RANDALL. That is very much the shorter one.

Mr. CHANEY. But it would cost much more money to build it?

Mr. RANDALL. Not only cost more money, but you could not build anything but a little 6-foot canal, if you ever built it.

Mr. BURTON. You can not get the water supply?

Mr. RANDALL. That would be the worst thing and it would require more than twice the number of locks. The fact is that this canal goes at the lowest summit level that any canal could be built between Lake Erie and Lake Michigan. There are 60 miles of this canal from Toledo to Defiance that is common ground for the Miami and Erie canal and this canal. Mr. Probasco, of Cincinnati, will tell you about the Miami and Erie Canal and give you some figures on that subject. We have about 225 to 235 miles of canal to build; 100 miles of that 110 miles, to be exact, would be the inclosing of the Maumee River, which will not be an expensive work. The bank one side is high and

on the other side it can be made high by dredging. Sixty miles of that is common ground that the Miami and Erie Canal would occupy along with us.

I believe the more you think of this project the more it will impress you that it is a national highway rather than a local one. The time will come and will have to come when the Mississippi River will be canalized not only down to the Gulf of Mexico but the tributaries will be canalized. They must be. Why? Unless that is done all of this trade that will go to Duluth and down through the Canadian canals will be diverted from Chicago. The moment that you take all the grain trade away you take the other trade with it and the future growth and prosperity of Chicago depends very largely upon this canal and the improving of these waterways north of the Missouri and south of the Mississippi, and when that is done then we will establish for time and all Chicago as the greatest transportation city, and we will bring New York to where it should be and remain the greatest city on the continent. [Applause.]

The CHAIRMAN. What is the distance of this proposed canal by the way of Fort Wayne from Toledo to Chicago?

Mr. RANDALL. The canal is 270 miles long, but 35 miles of that is already channel from Toledo up to a point in the lake where it can meet the other lake travel.

The CHAIRMAN. Is that the difference in distance?

Mr. RANDALL. Yes, sir. Thirty-five miles of that does not have to be built, and it is already there. That is the distance from Toledo to a point in the lake where the lake travel would come. Then, if we run this canal a little shorter and go in by Gerry, you will cut off 10 or 15 miles more. So the canal proper to be built is about 225 miles.

Mr. BURTON. What do you make the distance of that route from Toledo to Chicago?

Mr. RANDALL. Two hundred and thirty-five miles.

Mr. GILHAMS. I want to present Mr. Probasco, of Cincinnati, Ohio, who has been instrumental in saving to the State of Ohio the Miami and Erie Canal.

STATEMENT OF MR. HARRY R. PROBASCO, CINCINNATI, OHIO.

Mr. PROBASCO. Mr. Chairman and gentlemen of the committee, I very much regret that what I have to say may seem somewhat incoherent and illogical, because of the fact that I was not notified of the intention of coming here until yesterday morning at 10 o'clock, and so the digging out of the data which I thought would be appropriate for the discussion here had to be done on the train, but I have listened to the two arguments which have preceded and have looked at the picture of the map and have become more impressed with the prophetic character of this meeting than I had any idea I would.

Washington and Jefferson talked about connecting Lake Erie and the Ohio River by a canal in the early part of the last century. The subject grew apace until by private subscription, by public loan, and by land grant from the Government three canals were built across the State of Ohio, known as the western, the central, and the eastern canals. The western canal was the Miami and Erie Canal, first built from Cincinnati to Dayton, afterwards extended a short distance up

toward Defiance, and finally, by Government aid, from that point on, into the city of Toledo. I shall confine myself particularly to the Miami and Erie Canal, because of its relation to the project of these gentlemen from Fort Wayne.

The Miami and Erie Canal was completed and was very successfully used as the transporter of all kinds of merchandise as well as passengers until the advent of the railroads, and was the cause of building up along the line of the Miami and Erie Canal as beautiful a lot of municipalities as grace the fair face of our country anywhere. Commencing at Cincinnati there is a train of manufacturing towns all the way up to Hamilton. From Hamilton comes Middletown, Miamisburg, the "Gem City," Dayton, Bremen, Minster, Piqua, Defiance, Napoleon, and on to Toledo. Before the construction of the canal there was Dayton and Hamilton, and, if I am correctly informed, no other municipality, village, or hamlet of any sort. That part of the State of Ohio to-day is the richest part of the State. It passes through the smallest percentage of counties, composes the greatest wealth, and produces the greatest amount in dollars and cents in manufactures. It pays a greater proportion by all odds of the taxes of the entire State, all because of the nest egg, the Miami and Erie Canal.

I stand here to proclaim to you the building of a deep waterway between Chicago and Cincinnati, not to exceed 413 miles in length, by way of Defiance and this magnificent projected canal by way of Fort Wayne. I am not an engineer nor the son of an engineer, but I have before me the Chittenden report, which contains abundant verification of the prophecy which I now make—that before we live our allotted time out there will have been constructed a deep waterway, be it barge canal or ship canal, between Cincinnati and Chicago.

The CHAIRMAN. What report do you refer to?

Mr. PROBASCO. The Chittenden report. I want to give you a line of bibliography on this subject later on. I think it will be very interesting. I mean to cite you several authorities along this line.

There is already an existing right of way; not only a right of way, but a canal owned in fee simple by the State of Ohio from Cincinnati to Toledo, with a watershed that has millions of gallons surplus in the driest of seasons, connecting up with Defiance and from there on a beautiful canal to-day to Toledo. When the railroads came, about 1850, when the war came, and when by an extremely foolish policy on the part of the State of Ohio the canals of Ohio were leased they began to relapse in the main into a state, with apologies to Mr. Cleveland, of innocuous desuetude, so that, except the canal between Dayton and Cincinnati, up until the advent of what we call in Ohio playfully the "electric mule," not one portion of the canal system of the State of Ohio paid; but until 1890, when the "electric mule" (and I will describe it presently) took possession of the Miami and Erie Canal between Cincinnati and Dayton, the State of Ohio had put into the Miami and Erie Canal hundreds of thousands of dollars, considering expenses put in it and revenues derived from it.

Gentlemen, it is a false policy to talk about tolls for highways. All over the country pikes and roads are made free. The tollgate has become a thing of the past. An Indian in his birch-bark canoe may go to the lock tender at the Soo and in his gibberish ask to go through,

and hundreds of thousands of gallons of water are loosened and let go; the level forms and along goes that man without a cent paid.

Do not let us talk about compensation for public highways. Do not let us be narrow. Let us pursue the policy which the Government has always pursued, the expenditure of money wisely for public utilities, for public purposes, not for this time, not for to-day, but for generations to come and for all time. Not only so far as time is concerned. Do we build the Panama Canal for direct benefit to the United States alone? Not at all. Uncle Sam is big enough, bold enough and rich enough to build, not only for himself, but for the world at large.

I want to hand you, Mr. Chairman, a map of the canal system of the State of Ohio, and I want to call your attention to the map which I see in this magnificent paper written by Mr. Taylor, which I consider a very valuable contribution to canal literature. I want to call your attention to the map opposite page 9, showing the connection of the Miami and Erie Canal. I also hand to you a profile of the Miami and Erie Canal, the lower one on that plat.

To give you some idea of what the people of Ohio think of their canals, its governors in their messages and otherwise since the time of General Young, and before, have called the attention of the general assembly to the necessity of preserving our waterways until some larger use may be made of them. Our legislature has declared by enactment twice that it is the settled policy of the State of Ohio that our waterways shall remain intact, not with the antique, obsolete ditches compared to what we should have, should remain as they are to-day, but waiting for a realization of the prophecy of better and bigger things for at least one of those canals across the State of Ohio.

Let me say another thing: Our political parties have vied with one another at every recurring campaign to introduce in their political platforms declarations in favor of the maintenance and preservation of the canals. You would have had an ocular demonstration of what the people of Ohio think of their canals had you been present at the defeat of what is known as the Johnson bill, which was to give to the "electric mule," the Miami and Erie Transportation Company railroad, corporate powers and right to use the Miami and Erie Canal for railroad transportation purposes pure and simple. Not only carloads of people from various parts of Ohio, but train loads, wearing badges, "Keep the faith. Appeal to both political parties in the general assembly. Save the canals," gathered in the lobby waiting with almost bated breath for a decision as to whether or not that infamous steal would be perpetrated; and when news came to the lobby below—it was packed with thousands of people—that the bill had been defeated pandemonium broke loose. We sang songs like children of all sorts and kinds, we danced, and we made speeches, and the legislature was obliged to adjourn by reason of the noise. That is what the people of Ohio think of their canals. When I speak of the Miami and Erie Canal I speak of the canal which is the only canal which has paid expenses, and which connects up with this splendid scheme.

Governor Pattison said in his message:

The canals may be developed into a system of water highways adequate for transportation of freight in unbroken bulk at minimum rates between ports on the Great Lakes and ports on the Ohio, Mississippi, and the Gulf. With the improvements

being made from year to year in the Ohio River, and the vast and increasing navigation on the Great Lakes, I think it most important to conserve the canals which in the future may become so valuable in affording water connections between these two great arteries of commerce. I believe that the people want the canals preserved, improved, and made a real factor in the commerce of the State.

The present legislature is of the same attitude, and if there has not been now there soon will be introduced a bill looking to the scientific investigation of this whole project. We look for the Government to come to the aid of the State in this construction, not that Ohio is poor—I do not believe there is a State in the Union as rich as Ohio. We have millions to burn and no debts. We could afford to build the canal, but is it wise that we should, when here is a governmental project on foot that may cause the construction of a canal 12 feet deep, and we might build a different depth? There would be a lack of uniformity in the draft of vessels and there would be no system in the canalization of this great Middle West.

Mr. Chairman, on the 4th of March, 1896, the then Secretary of War addressed the Speaker of the House of Representatives, inclosing a report from a board of engineers appointed by the Secretary of War under the provisions of the river and harbor act of August 17, 1894. That act authorized and directed the Secretary of War "to appoint a board of three engineers of the Army, whose duty it shall be to survey the Miami and Erie Canal, the Ohio Canal, and such branches thereof and such river and stream channels as may, in their judgment, form available portions of a continuous canal connecting the waters of Lake Erie with the Ohio River through the State of Ohio, and to report as to the feasibility and advisability of improving and widening such canal to 70 feet at the water line and deepening the same to 7 feet, and by construction of new locks," etc.

That work was apportioned among certain engineers, and their reports are appended. Mr. Chairman, I think possibly there has been nothing written equal to the report of these engineers on the subject of internal waterways—that is, artificial canals as contrasted and compared with the canalization and improvement of natural water courses.

As I said before, the Government contributed 1,230,521 acres of land, which were sold and the proceeds applied to the construction of the Miami and Erie Canal in the main.

By act of Congress of June 14, 1880, a survey of the old Wabash and Erie and the Miami and Erie canals was ordered, and the work was performed under the direction of Maj. John M. Wilson, of the Corps of Engineers. His report is dated February 3, 1881, and forms Senate Executive Document No. 55, Forty-sixth Congress, third session. It gives detailed estimates of the cost of enlarging these canals to the dimensions of the Erie Canal of New York State.

Showing then that they had in mind making a uniform draft for these canals.

Now, in describing the western or Miami and Erie route, they say:

This route extends from Toledo, on Lake Erie, at the mouth of the Maumee River, to Cincinnati, on the Ohio, at the mouth of Mill Creek. It ascends the valley of the Maumee River to Defiance, and thence follows the general line of the Auglaize, although at some distance from the stream, to Spencerville, and thence the valley of the St. Marys to New Bremen, where it reaches the summit level at a distance of 126 miles from Toledo. The summit level extends for a distance of 23 miles, and carries the canal over into the valley of the Great Miami at Piqua. The canal follows the valley of this stream to Hamilton, Ohio, whence it crosses a low divide into the valley of Mill Creek, where it follows to the Ohio.

Now, Mr. Chairman, the water supply is all important, and that water supply must be at the summit level naturally. On this western route there is an excess over demand in the driest weather of 857,000,000 gallons of water. Quoting now from page 53 of the report:

As there exists a very general belief in the inadequacy of the water supply for a canal along any of the proposed routes, an application has been made of the foregoing figures to the case of a considerably larger canal. The dimensions adopted were: Canal trunk, 85 feet at top, 60 feet at bottom, 10 feet depth; locks, 200 by 26 feet, with a 12-foot lift.

On the western route the deficiency amounts to 6,514,000,000, and the available supply in the direct years to 7,426,000,000, leaving a surplus of 912,000,000.

Mr. CHANEY. With a canal 10 feet deep?

Mr. PROBASCO. Yes, sir; but I am coming to rather a surprising statement. After all, when we commence to talk about this kind of a canal we look to Lyman E. Cooley, of Chicago. He is the greatest authority in the world to-day on canals. He is looked up to by engineers all over the world as an authority. He is the master spirit, the mind, the activity that promoted and constructed the deep waterway between Chicago and St. Louis.

Some question was asked this morning, I think, about the size of vessels. In 1895 the general manager of the American Steel Barge Company at New York, reported that he thought that vessels adapted to lake and canal trade, in order to be seaworthy and profitable, could be made to carry their cargo profitably and be perfectly seaworthy on a draft of 8 or 9 feet. He said that the cost of such barges would then be about \$40 per ton of their carrying capacity.

Again, in a rather rambling sort of way, the estimated time of passage of a barge from Cincinnati to the mouth of the Detroit River, by canal, slack water, and lake (275 miles), is eighty and nine-tenths hours; embracing a lockage of 862 feet, in which fourteen and four-tenths hours would be consumed.

The highest level of the canal is 947 feet above the level of the sea. This is at a point between Piqua and St. Mary.

Some question was asked about the rates of speed. The rates of speed on the lakes for such barges is estimated at 6 miles an hour; on the canals 4 miles an hour; on slack water 6 miles an hour; on the Ohio River, up, 5 miles an hour; on the Ohio River, down, 7 miles an hour.

The time consumed in lockage is one minute per foot.

The feasibility of practical success on an enlarged canal along any of the routes and the limit in its dimensions depend upon the water supply available for feeding the canal, especially at the summit level. There is no other considerable engineering difficulty that may not be readily surmounted if the construction of such canal be deemed feasible.

If you want some information as to the number of locks on the Miami and Erie Canal I have that.

The CHAIRMAN. Yes, sir; we would like to have that information.

Mr. PROBASCO. I am rather solicitous about proceeding, because the Senator is here waiting to be heard.

Senator HEMENWAY. No, sir; I am just here to listen; I can not stay.

Mr. PROBASCO. Furthermore, I am only here as a sort of helper, because the main proposition is between Toledo and Chicago, but if you would like to have the lockage I will give it to you.

Mr. HARDY. This route is between Cincinnati and Toledo?

Mr. PROBASCO. Yes, sir; the Miami and Erie Canal route, and the route which has been spoken of as the route between Chicago and Toledo by way of Defiance.

Mr. GILLIAMS. The canal he speaks of connects with the one we are asking a survey for.

Mr. PROBASCO. The number of locks on the north slope of the Miami and Erie Canal is 46 and the number of locks on the south slope is 52. I might say to you now that the legislature some few years ago ceased its parsimonious policy and has been appropriating sufficient sums to dredge the canal, at least between the northern part of the Ohio Canal and the Miami and Erie Canal from Cincinnati to Dayton, to a depth of 5 feet, and they have put in splendid concrete locks and navigation will soon be opened. I may say in addition that I am one of the directors and attorney for what we call the Ohio Boat Company. We have eight canal boats which are propelled by a very ingenious motive power, gasoline, with a wheel sunken in the center of the boat, and it is very profitable, indeed.

Mr. BURTON. Is that wheel working well?

Mr. PROBASCO. Yes, sir; splendidly. But the canal is so shallow that we sometimes feel as though we were traveling over fallen dew, but of course the wheel revolving so close to the bottom sometimes becomes clogged.

Mr. BURTON. But it does its work without wash.

Mr. PROBASCO. There is absolutely no wash. We have taken delegations of the legislature and boards of public works and other citizens, great loads of them to make the draft as great as possible, and there has been absolutely no wash, but everybody has expressed satisfaction, and after that first experiment we invested in these additional boats.

Mr. WHEELER. Do I understand this canal is open from Cincinnati to Dayton?

Mr. PROBASCO. It is open from Cincinnati to Dayton, except for mud, and we are, or rather the State is, trying to dredge that. We are in court now, just as I am here (I am a sort of *amicus curiæ*, I am a friend of court), trying to remove obstructions—railroad tracks placed there by the “electric mule.” I have no business here except as I am indirectly related. We are in the courts of Cincinnati, in which the “electric mule” has gone into the hands of receivers, giving the court to be advised that the rails of the “electric mule” are rusting, and have been unused for two or three years on the banks of the canal, and that its plant is otherwise decaying, and that because of the receivers refusing to comply with the “electric mule’s” contract to furnish receptacles to haul away the dredgings, and because of the contractors making the dredgings being in contempt of court by throwing the dredgings of mud on these tracks, the money appropriated by the State for such dredgings can not be used and that this great improvement is therefore being delayed. We will soon be rid of that, however.

Mr. WHEELER. About what time can you make on that 5-foot canal?

Mr. PROBASCO. We have made, when the canal was in good condition, 7 miles down and 5 miles up, a pretty good rate.

Mr. WHEELER. Yes; I would not think you could do that.

Mr. PROBASCO. Maybe I am exaggerating that a little. [Reading again from page 63, Government engineers' report:]

The navigable possibilities of the Ohio will fix the maximum draft of the boat, and the conditions of lake navigation the minimum draft. Between these two limits it is believed that the requirements of canal construction can readily be satisfied. The only obstacle in this direction is the limited water supply, and this can be obtained for a 10-foot canal on all except possibly the eastern route.

So that these engineers, after a careful survey, concede that at least 10 feet can be obtained.

In the following discussion it is therefore assumed that the Ohio River will have been improved by the time any of the proposed canals are completed, so that it can float boats drawing not less than 8 and possibly 9 feet of water, except at extreme low states.

You all know what splendid progress is being made in the building of locks and dams on the Ohio River. Some of you may have had the pleasure and honor of meeting Mr. Albert Bettinger. I am chairman and he is a member, and we have one other member just as excellent as he is, of the waterways committee of the City Club; so that I am still further interested in that. I want to say further, that so far as the railroads are concerned, that during the eight years I was counsel for the Cincinnati, Hamilton and Dayton Railroad, which parallels this canal, when efforts began to be made, and organized obstruction to and schemes for the abandonment of the Miami and Erie Canal were started, our president gave me full instructions to fight it to the uttermost, to keep the canal alive. I was surprised at first, but he analyzed it in a minute. He said:

The short haul does not bring us any revenue; we can and do run our switches into their factories and take out their finished product, it is the long haul that pays.

So the railroads are fighting for the maintenance of canals. You will find what Senator Depew, the president of the New York Central, says. I will read it to you:

I have always thought the existence of the Erie Canal a benefit to the New York Central Railway, and have therefore favored every movement which liberalized its management or promoted its interests; but the benefits inherent to the canal do not go to the railway only. They affect every industry and every class, and influence, if they do not control, the price of prime necessities as well as stimulate production. Only for the great northern waterway, created by the connection of the chain of lakes by artificial ways, originally of 12 and later 21 feet draft, the immense production of the Northwest could be but partly transported to the Atlantic seaboard and thence to the foreign markets, and that great region would become largely unproductive.

Mr. M. E. Ingalls, who has probably done as much for Cincinnati as anybody in it, who has revived the old Chesapeake and Ohio Railroad, who revived the Big Four Road, competing from Cincinnati north with the Miami and Erie Canal, has expressed similar views. Railroad men naturally favor canal construction, because they can not afford with profit to carry the short-haul freight, but can carry at a profit the long haul, the finished product.

The CHAIRMAN. While that is very interesting, I suppose we will have to hasten along a little bit, and we would like to hear you on the commerce of the Miami and Erie Canal, as bearing upon the use of these canals, but more particularly its connection with this project before us.

Mr. PROBASCO. I am coming right to that. There is one thing I want to read you.

The CHAIRMAN. I do not want to break in upon your argument.

Mr. PROBASCO. I want to be polite; I am not the whole show; I am the side show to these gentlemen who are the whole show; these gentlemen are too modest entirely; they have a great big world's proposition. I want to read this:

The great advantages of the western route are its superior water supply, its important terminal points, and the magnitude of its local traffic. [See Exhibit J.] Its principal drawbacks are its length, lockage, and original cost. A consideration of importance in favor of this route arises from its relation to the old Wabash and Erie route, and particularly to the project advanced many years ago, and lately being brought forward again, to connect the west end of Lake Erie with the southern end of Lake Michigan. The junction of this route with the Miami and Erie Canal is a little south of Defiance, in the Maumee Valley. Whatever doubt may exist as to its value as against the lake route between Chicago and Lake Erie points, there can be no doubt that as part of the route from the Ohio River to the southern end of Lake Michigan it may yet be of much importance. For instance, coal en route to Chicago would have the following advantage in time by the canal route over that by the lakes: From Defiance Junction to Chicago by way of Fort Wayne there are 140 miles of canal, 420 feet of lockage, and 38 miles of lake, making an equivalent of forty-eight and three-tenths hours time. By way of Toledo the canal distance would be 64 miles, lockage 150 feet, lake distance 691 miles, and time one hundred and thirty-three and six-tenths hours. The possible development of such a line is a point in favor of the Miami and Erie route, and in the present surveys the existing line through Defiance was for this reason adhered to, although a saving in distance of 15 miles could be secured by cutting across the angle between the Auglaize and the Maumee rivers.

Let me cite you, without reading it, page 69 of this same report, in which the paragraph begins:

It is a recognized fact among the best railroad authorities that free water competition, instead of being a detriment to the railroads, is a benefit to them. The classes of freight that can be carried most economically by water are those that are carried with least profit by the railroads.

In passing I call your attention also to page 68. If I were arguing the case, I would file a brief instead of talking. You find on page 88 a letter of Mr. Alexander McDougall, general manager of the American Steel Barge Company of New York, as to the size of vessels. I have here a newspaper clipping of my dear old friend Murat Halstead, which I shall, with your permission, read into the record, because Murat Halstead was a thinker.

With the canals of Ohio made ship canals, especially if one of them—the one of the Miamis—we could compete successfully in the transportation of iron and coal and wheat with marvelous advantage, especially to the State of Ohio. The cost of converting the almost abandoned and despised canals, making them equivalent to the navigation of the Ohio, would not be half the sum that would be demanded for the enlargement of the Erie Canal, and we would truly want two ship channels across the State.

Now, Mr. Chairman, answering your question directly, let me read you what is said by Lyman E. Cooley, who is a greater authority than I am or ever dared to be, because I quote him as my authority. I wrote him a letter and he replied, highly commending it, and I want to quote this:

As part of my studies of a related deep-waterway system I have become familiar in a general way with the available water routes across the State of Ohio between Lake Erie and the Ohio River, and in 1902 I addressed the joint assembly, advocating that the State waterways be retained until such time as their relation to a waterway system could be defined.

From all the information which I have gathered I believe it to be feasible to produce a water supply sufficient to feed a waterway 16 feet deep by the Miami and Erie route

but in this connection it may be necessary to cut down the summit level so as to make available a larger gathering ground.

I had never heard of this project before, possibly he may have.

A branch of such a route could extend from Defiance, by way of Fort William, into the Wabash Valley and be of interest to the States of Indiana and Illinois.

It goes without saying that such a waterway from the head of Lake Erie at Toledo to the Ohio River at Cincinnati would have a very great commercial value. Cincinnati is a most favorable entrepôt for the commerce of the Ohio River and tributaries, when the same shall be developed, and occupies an advantageous relation to magnificent coal deposits of West Virginia and Kentucky. There should be a large coal commerce to the lake region by this route and a return in iron-ore shipments.

Answering more directly, I have a statement here, carefully prepared, which shows you the enormous commercial possibilities of a route of this kind. There are on the Miami and Erie Canal route that I am talking about paper mills, one industry alone, which make 2,022,000 pounds of paper a day. The largest paper mill in the world, the Champion Coated Paper Company, produces 525,000 pounds of paper a day. That company, and nearly all these companies, are members of the Miami and Erie Canal Shippers Association, of which I am counsel. Indirectly, each pound of paper produced consumes one-half a pound of raw material. The raw material is the canal boat's graft, and it is not the railroad's happy choice for transportation, but the canal's. Every pound of paper produced by those concerns consumes one pound of coal, another item of transportation for canal companies. I hand you a statement showing that the number of counties in Ohio is 88; that the counties through which the Miami and Erie Canal passes is but 15; percentage of counties, 17 per cent; total taxable property in 88 counties, \$2,163,601,593; total taxable property in the 15 counties, \$635,223,026, and percentage of taxable property in the 15 counties, 29 per cent, and other data in connection with that.

Now, Mr. Chairman, from Chicago to Toledo by this proposed route is about 270 miles, taking it out a little into the lake so as to get the deep water; from St. Louis to Chicago is 367 miles; from Cairo to the Gulf of Mexico, 1,072 miles; from St. Louis to Cairo, 186 miles, making a total of 1,895 miles. The distance from New Orleans to Toledo by the Miami and Erie Canal route is a little bit less, 1,743 miles. There is much more here.

Now, calling your attention to page 4 of a published speech of Hon. Charles V. Fornes in the House of Representatives, he says:

During the season of navigation on the Lakes, just closed, 38 vessels, with a total tonnage of 27,010, passed out of existence. With the exception of one steamship, all the boats lost were freighters. The aggregate loss in value was \$1,692,000. This does not, of course, include large amounts which were paid out by the underwriters for partial losses. This latter amount doubtless exceeds the aforesaid amount. The season was remarkable for the number of disastrous collisions on the route between Lake Huron and Lake Erie, being 129 out of a total of 534.

I shall cease after calling your attention, Mr. Chairman, to several contributions in the way of bibliography on this subject. We have a State chief engineer, a man named Charles E. Perkins, of Ohio, and in the report of the board on public works for the fiscal year ending November 15, 1903, is a very valuable contribution, and if you would like to have some copies I have no doubt they would send them to you.

Then you will find in the December number of the Journal of the Western Society of Engineers, volume 11, of December, 1906, a very

excellent paper by Mr. Lyman E. Cooley, and let me read this one paragraph, if I may:

At that time I discovered that the existing commerce of the Great Lakes was 29½ per cent, measured in ton-miles, of all the railways of the United States; that the domestic commerce of the United States carried by water was about 87 per cent (in ton-miles) of that carried by all the railroads; that the over-sea tonnage, measured in ton-miles, of commodities in the foreign trade was about 123 per cent of that of all the railroads of the United States, and that the aggregate service of water to the United States as a means of transportation was about 2.1 times of that by rail. That is sufficient reason to justify consideration of these matters.

Then there is a very excellent book, which deals directly and incidentally with this subject, known as the "History of the Ohio Canals," published by the Ohio State Archæological and Historical Society, from the press of Fred. J. Hare.

Mr. ROTHERMEL. What is the date of it?

Mr. PROBASCO. It was published in 1905. In going to the very bottom of this thing I am sure you will also find of considerable assistance a paper entitled "The Lakes and Gulf Waterways: A report by the internal improvement commission of Illinois to the governor, Hon. Charles S. Deneen," by Mr. Lyman Cooley, of course.

The CHAIRMAN. What is the date of that last report?

Mr. PROBASCO. 1906, published by Phillips Brothers, State printers, in 1906. Another excellent contribution to the subject is an oration by Senator Philander C. Knox before the Chamber of Commerce of Pittsburg, Pa., on February 12, 1908, entitled "Future commerce." I might say that while I represent in a general way the Miami and Erie Canal Shippers' Association, the Miami and Erie Canal Association, the Ohio Boat Company, I think I can assume to act for the City Club of Cincinnati, the Business Men's Club of Cincinnati, of a thousand members and a large waiting list, the most potent organization in Ohio, which is in favor, generally, of all these projects. The chamber of commerce and all other commercial bodies were in favor of it. We joined hands most heartily.

Ohio, which is the home of the next President, which is the home of a relative of the President, and we are related to the President on that account; which is the home of our dear friend, Senator Foraker, who loves everybody, including the darkies and the President—

The queen city of the West
In her garlands drest,
On the banks of the beautiful river—

we want to join up with that maelstrom of commerce, Chicago; we want to hitch up with Fort Wayne, that enterprising town which I am always pleased to visit; we want to see not only canal boats of 75 tons, we want to see the barge canal boat that can be loaded at Duluth, can be taken to Toledo, to Cincinnati, to the Ohio River, and on to the South. I may be a dreamer; a dreamer discovered America; a dreamer made the steam engine; a dreamer made electricity. We all scoff at the dreamer while he dreams, but when he is dead we build on his dreams and the world, after all, in its great progress, its great advancement, in its vast achievements, is the fruit of dreams. [Applause.]

Another thing I wanted to refer to, Mr. Chairman, was document 492 Sixtieth Congress, first session, concerning the canalization of the Ohio River. I am sorry that I was not able in a little bit more succinct and logical way to present this question, but I assure you I

am grateful to you in behalf of the bodies whom I directly represent and whom I feel that I incidentally represent, and am obliged to the courtesy of our friend from Toledo for giving us an opportunity to be thus heard.

The CHAIRMAN. Your address was very interesting, indeed.

OHIO.

Number of counties in the State.....	88
Counties through which the Miami and Erie Canal passes.....	15
Percentage of counties..... per cent..	17
Total taxable property in 88 counties.....	\$2, 163, 601, 593
Total taxable property in 15 counties.....	\$635, 223, 026
Percentage in 15 counties..... per cent..	29
Total acreage in 88 counties.....	25, 451, 721
Total acreage in 15 counties.....	3, 995, 261
Percentage in 15 counties..... per cent..	15

Reservoirs.

Route.	Acres.	Cubic feet.
Eastern.....	3,179	2,900,000,000
Central.....	19,806	5,750,000,000
Western.....	27,100	10,100,000,000

Mr. GILHAMS. I think we will have but one closing speech on this question to-day, and that will be from Mr. C. S. Bash, of Fort Wayne, one of the most conspicuous and prominent business men of that city, and also of northeastern Indiana—a man who has had a great deal to do with the public affairs of our country and one whom you will find well posted on the subject of transportation. That has been his life's work, and I am pleased to have Mr. Bash address the committee.

STATEMENT OF MR. CHARLES SUMNER BASH.

Mr. BASH. Gentlemen, I want to thank you for your patience. I am not a transportation man, but an ordinary business man, but have been connected with the shipping of produce of all kinds since 1872, when I got out of school. I have been thirty-six years doing nothing but studying freight rates, how to reach this point or that at the lowest possible rate, and trying to get a margin out of the handling of produce generally, which is our business. I am not an attorney, and I am not able to address you as such or to give you anything in the way of an entertaining speech. I want to say, however, that I come to you with no private interests of any kind, nature, or description, with no ax to grind of any kind, but simply at the request of the commercial club of our city am I here, as well as the other gentlemen who have addressed you. I think it is well to know that fact and that it should so be noted here.

First, I have filed with you my written credentials as representative of the grain dealers of the State of Indiana, who at their meeting, and at the suggestion of the President, asked me to appear before you in the interest of a deep-waterway canal. I am here also at the instigation and request of the National Hay Association, who on the 4th day of last July held their annual meeting at Put in Bay, passed a resolution indorsing deep-waterway canals, naming me as chairman of

the committee on demurrage and reciprocal demurrage, and asked me to appear before you in behalf of deep-waterway canals. I also appear before you as chairman of the National Grain Dealers' Association, representing the grain dealers of the United States from Maine to California, who also appointed me as chairman of this same committee, demurrage and reciprocal demurrage.

Before going into this question, I want to say to you why this question of demurrage and reciprocal demurrage has been taken up, and why they have appointed the strongest committee they could get to ask people to take an interest in this, with a view of getting relief. The grain dealers, the hay dealers, all manner of merchandising dealers in the United States, have been suffering, and suffering greatly, for the past three years. We have jumped to this manner of getting relief and then to that; we have tried this expedient and that, and yet we have not found relief, and all we get from the railroad companies, when we go to them, is "We simply can not give you the accommodations, gentlemen; you must look elsewhere for relief." They have admitted, plainly and pointedly, every time we have gone to them, that they have not the equipment to give us relief, nor the motive power, nor the terminals, so that now the question comes plainly to you to solve it right here. The only thing to do is to give us deep waterway canals that we may get this relief, and, in my humble opinion, it is the only way in which this relief can be had.

In order to give the railroads more equipment and to make them better able to take care of their traffic, they have been, for the past three or five years, exacting all kinds of arbitrary, unjust, discriminatory tactics, which has driven the business men of this country fairly to desperation. The consequence is they have besieged every legislature asking them to pass laws for reciprocal demurrage, making railroad companies to pay back at the same rate for failure to carry these goods as they pay the public for failure to load them in time when cars were furnished. What has been the result? The railroad companies have laid down. In our little State of Indiana they say, "For God's sake stop; we have had enough; we can not afford to pay you at the same rate for these delays on our part, so we want to quit that kind of a game." They have fallen out among themselves and within the last few days they have abolished their demurrage agents at Fort Wayne—the Nickel Plate Company and others—saying they would not have anything more to do with the damnable thing; that it is an outrage. They take a shipper, a man who is gathering the goods up to a ship, and then mulch him with damages for failure to load and unload promptly. Perhaps a shipper has stock in storage for days and weeks, a month, to go from Fort Wayne to Chicago, a straight line. We have had goods lie in the yards six, eight, ten, and fourteen days. These statements are not myths, they are truths, but the railroad companies are powerless to give relief. They are doing their utmost, there is no question about it.

Let us look just a moment at what they have done, and understand we do not come here as an enemy of the railroads, but to help them. Only a few days ago in Chicago one of the greatest freight agents there stated to Mr. Harris, "We are with you in this campaign. Do everything you can to get that canal from Lake Michigan to Lake Erie." They are with us now, and I want to read you just a little

experience that some of the business men had here and there. Here is a man down on the Nickel Plate, 40 miles from us. He says:

While we lost heavily in the last two or three years on account of delays in transit and not furnishing cars, we are not able to give any amounts at present. We will estimate it would be at least a couple thousand dollars.

Here is another:

We have over \$2,000 pending in claims now for losses during the past year on 20 cars which got out of condition on account of unreasonable delays between points on the Big Four and Richmond, Va.

He states that during the years 1903, 1904, 1905, 1906, and 1907 it cost them \$2,000 a year penalty, and they have ceased handling hay—have gone out of the business.

Here is one from Union City, which states:

Our losses from the causes mentioned in your letter from July 1, 1906, to July 1, 1907, were about \$6,000.

Here is another from another city near by stating that they had always had more or less trouble with the railroads on account of the slow movement of the cars en route, and they believe they could make a great improvement in that direction. For example, they ship considerable grain to Cleveland, which is a direct road from there on the Big Four, "and very frequently it will take from eight to ten days and as high as two weeks to get a car through, when it should take not to exceed three days."

The CHAIRMAN. Where is that from?

Mr. BASH. That is from Union City. [Reading:]

We believe that a great part of this delay is caused in allowing the cars to remain at the terminal and junction points, as quite frequently they will lie in our own town two or three days before being moved. We believe that there should be some plan to show the railroad company that the cars should be moved immediately after being billed out.

They claim that frequently cars remain two or three days on the tracks after being billed out. We all know in business that that is true; that is a fact; no one disputes it, however. But in connection with this, gentlemen, you should step over to the Interstate Commerce Commission and ask them to bring you some data on this subject. It would, in my judgment, determine you upon a recommendation for this relief, and would get a vote in the House and Senate in ten minutes after the report is filed showing what this country is losing daily on account of the poor service in the way of cars. Over half a million dollars has been lost in the State of Indiana on one corn crop in one year—over half a million dollars. You will say, "That is not so much; you can not afford to build a canal for that." But it does not stop there. When the dealer suffers this loss, he goes out of business and stops buying. The grain then lies in the farmer's hands and he necessarily must be the loser. The matter then becomes still more widespread. The merchant who is expecting compensation from the farmer for his goods which he has sold him is also the loser; so the loss just goes on like a pile of bricks; one topples and they go down one after the other, and you can not measure the loss or damage; you can not approach or get one scintilla of the immense losses which are being suffered daily. If you give me time and could bear with me, bring your satchels here and let me stay a week, I could bring data in and show you that this loss amounts to more every year than the construc-

tion of the largest ship canal from Toledo to Chicago could be built for. I will show you that every year that amount of money is lost—lost and gone, never to come back. That is a direct and an indirect loss, understand. I will prove it so absolutely that you will say, "Mr. Bash has told the truth; it is an absolute fact." And yet we sit here daily and wonder what shall be done to relieve this immense distress in this country.

As one instance, we handle 1,000 cars of hay a year as one item, and it is all bought in one county—Allen—of the State of Indiana. Just that little quantity furnishes 1,000 cars for shipment outside of what is furnished to other dealers and buyers. That will just give you a little conception of the importance of that business. Three years ago we waited five months to get the hay from the town of Hoagland, Ind., on the Pennsylvania line, moved out of that little town, or, rather, this country surrounding it, and we suffered a cancellation of the sales of that hay three different times. In other words, we sold it and defaulted on our contracts and paid the penalty; we sold it again and defaulted on our contracts and paid the penalty; we sold it the third time and we were obliged to stop buying, and the farmer was obliged to hold his hay or feed it up on the farm. That is not a dream; that is not a theory; that is simply the plain statement of every-day business which happened, not to us only, but to thousands of dealers all over the country. It happened right along. A large amount of this hay we sold to go South, to Memphis, New Orleans, Louisville, Nashville, Cincinnati, then turned East and went clear down as far as Maine, Boston, Albany, and all through that territory.

I want to give you an idea as to how this rate question works when you get down to figuring as to the cost of marketing your goods. We say, "Well, suppose we build a canal and we have a little lower rate of freight on that canal; that would not compensate for all this expenditure, would it?" No, but that is not the way it works. We can ship from Fort Wayne, from all over northwestern Ohio, from Michigan, Wisconsin, Minnesota, right around the belt, out of four or five States; we can ship hay to Memphis, Tenn., for 5 cents a hundred, or \$1 per ton less than we can to Nashville, Tenn., the interior of the State. Why? Because Memphis is on the river; that is plain. What does that mean? That means that Memphis, being a river port and having the benefit of water transportation, that all the goods from all these sister States are shipped to that point and through that gateway, understand, for she is a distributing point, and reshipped and rebilled beyond; all goods shipped that way get the benefit of this 5 cents a hundred or \$1 per ton discount. Is it not plain enough, gentlemen, what a canal three or four hundred miles long would do for the shipping interests of this country, for the commercial interests from Chicago to Cincinnati? Is it not plain? You can not sit here and estimate the immense savings that would come to the people of the United States, not in an hour or two hours, nor in a year. It would keep you figuring constantly, and then you would not arrive at the immense amount of saving to be made on such a waterway.

Mr. HARDY. Is that rate to Nashville and Memphis by rail?

Mr. BASH. All rail.

Mr. HARDY. Do you not think that there is a little evil involved in this whole matter by reason of permitting the railroads to recoup

themselves on these interior points in order to break down your canal and your water transportation competition?

Mr. BASH. Yes, sir; but you can not stop it. I was chairman of the committee for the National Grain Dealers' Association of Indiana when we went before our legislature for a railroad commission. In framing that bill I brought up a copy of the Texas commission bill. We took the edges off it; we did not have it as severe as it had been passed in Texas; we modified it very materially, and we offered that bill to the Indiana legislature to pass and to become a law. The general freight agent of one of the railroads running through Indianapolis to Lake Erie appeared before the committee with Judge Fields, Daniel Sims, of Lafayette, of the Wabash, and Mr. Pickens, of the Pennsylvania, and they sat down with us in committee and they said, "Gentlemen, we can not submit to such a bill; we must have the privilege of making lower rates to all water ports on the Ohio River."

Mr. HARDY. That is very interesting. I want to know, if we are here for anything, if that is not right ought we not to stop it?

Mr. BASH. I think so. Let me give you another instance along the same line. A year ago I wrote to Mr. Sprott, the division freight agent of the Wabash Railroad, and called his attention to the fact that oats were being carried at 6.4 cents a hundred from East St. Louis to the city of Cleveland, right over the Wabash Railroad line, past our door, and that we had an elevator at Aboite, Ind., 10 miles west of us, and had to pay 10 cents a hundred from Aboite to Cleveland. I got a letter immediately that I did not know what I was talking about; that it was not true; that the statement was false. I took it up with the local agent, and he said, "Charlie, you are dreaming." I went to St. Louis, to the general freight agent, and he said, "We make no such rates." Then I went to Mr. Clark, of the Union Elevator Company, and I said, "Mr. Clark, you and I are the damndest liars out of jail." I said, "We have either to prove it or stand committed to a great misstatement, to put it lightly." He said, "Please find a prepaid bill of oats from East St. Louis to Cleveland. You will find the rate is 6.4 cents per hundred." Further comment is needless. I took the letter and the freight bill to our agent, and I said, "What have you to say?" He said, "It speaks for itself; I have nothing to say." The Union Elevator Company man said, "Remember that with the railroad agent to-day, his right hand does not know what his left hand is doing." Those are his words.

Mr. HARDY. To carry that a little further, has not that same kind of practice been utilized to kill all water transportation in the United States for the last ten years?

Mr. BASH. That is what it has been utilized for.

Mr. HARDY. Is there any water transportation at Memphis on the river?

Mr. BASH. I do not know; I have not been down there.

Mr. HARDY. I have been there; there are no boats on the river.

Mr. BASH. The rates are made that way, nevertheless.

Mr. HARDY. But they do not carry any freight.

Mr. BASH. While we have that up, let us go a little further. Until recently a proportional billing rate has been made from East St. Louis to points as far as Milan, Mich., away north of us, 100 miles, of 6 cents per hundred on grain, in order for what? In order to take it away from the waterways. It is as plain as the nose on your face. It is a

plain absolute fact that that is what they do it for. The same is done from Chicago. By reference to the Produce Reporter, the journal issued there, you can get every Friday evening a statement showing the rates. You will find that $4\frac{1}{2}$ cents per hundred discount is made on grain and through products from Chicago eastward from the rate that is made on any local billing through Indiana, Michigan, Illinois, where it goes direct. In other words, they give an advantage of $4\frac{1}{2}$ cents per hundred in order to take that freight from these waterways. You will find, further, that they give a discount of 2 cents a hundred on all these commodities where the same go for export. If you look a little further into this question you will find that 95 per cent of our commerce is internal, and why should we give up all these privileges to foster and help a little export trade, and then be mulcted for all these excessive charges on all our internal commerce? There is no other relief except by waterways, and that is the only way you will ever strangle that thing; there is no other way.

Mr. ROTHERMEL. Do the trolley lines have a right to carry freight in your State?

Mr. BASH. Yes—that is, they do it; I do not think their franchises really allow them to do it.

Mr. PROBASCO. Yes; they have that right.

Mr. ROTHERMEL. Did not the steam railroads object to that in your State?

Mr. BASH. Oh, yes; they refused to come in with them when they got the bill first through and in the legislature; they put it all under one blanket.

Mr. BURTON. Then you think the best railroad rate regulator is a first-class waterway?

Mr. BASH. Absolutely, and it will be a barrier that can never be surmounted. Why? Because it is never subject to private ownership and control and manipulation. If you would stop here and listen to me, I could recount stories to you that you would say, "Is it possible that such things could be committed in this way?"

Mr. BIRDSALL. I do not suppose there is any disposition to disagree with you on that point.

Mr. BASH. I am glad to be interrogated, gentlemen, because it brings up things in my mind. I have been on these demurrage committees for the last ten years, and I forget so much.

Mr. BURTON. What do you mean by "demurrage?"

Mr. BASH. Demurrage is a penalty for failure to load or unload a car. Our legislature and a number of other State legislatures have passed laws that if a railroad does not furnish a car in so many hours it must pay a dollar an hour; but they have what they call a "midnight tariff"—that is, a tariff which is put into effect between sunset and sunrise. Out in Omaha, during the last session of our legislature—the reason I remember it is because I used it in an illustration before the members there—there was an accumulation of about 5,000,000 to 6,000,000 bushels of corn. The eastern trunk lines wanted it; the gulf trunk lines wanted it; the river steamboats wanted it. So two or three railroad freight agents and one or two commission men, or grain dealers, got together and they said: "Now, we will put into effect a rate of 5 cents per hundred less on corn at midnight a certain date hence. You go into the market, now, Mr. Dealer, and buy up the corn, depending upon us giving you this rate,

and market the corn, and this 5 cents a hundred we will put down in our pockets." They did it; that is all there was to it. That did not help the corn producer; it did not help the farmer; it did not help a legitimate dealer in the business anywhere in the United States; it did not help the stockholders of the railroads. It was a crime, an injustice against every man outside of the little coterie of dealers who put up that job. You could not do that kind of business nor have such business done if you had a waterway that would strangle all these fellows and put beyond them the ability to do such things.

Mr. BURTON. They can not do that now under the law, can they?

Mr. BASH. Yes, sir. The interstate-commerce law says you must give them thirty-six hours' notice of an advance in rates, but no notice of a decline; it is well fixed for that.

Mr. BURTON. Why do they call it the "midnight rate?"

Mr. BASH. The "midnight tariff," because it is made at midnight, when you and I are sleeping; only the fellows up who are on the job. It is a midnight tariff.

Mr. ROTHERMEL. The legislature is asleep?

Mr. BASH. Yes, sir; nobody is in session. But that is a fact, and it was dubbed the "midnight tariff;" that was the name under which it was published.

Mr. HARDY. Right along that line, if you get your canals all over this country and that results in reducing the rates of railroads which still carry your freights between water points, and results further in raising railroad rates to interior points, are not the people, as a whole, still suffering from the operation of the rates?

Mr. BASH. It will not do that. It has not worked that way anywhere it has been tried.

The CHAIRMAN. Did you not just say a few moments ago that between water points it would reduce the rates?

Mr. BASH. Yes, sir; but I did not say the railroads would suffer.

The CHAIRMAN. He did not say that.

Mr. BASH. He says, "Will not the people be just as badly off?"

The CHAIRMAN. The interior people, who do not get the benefit of the water rates?

Mr. BASH. This is the reason why they will not; that is what has built up Buffalo, Cleveland, Detroit, Chicago, Milwaukee, Duluth; that is what has built up the Lake Shore and Michigan, the Michigan Central, the New York Central. Mr. Thompson said, and he stated truly, a few days ago that the New York Central could afford to build a canal along their road and pay for it for the benefits they would receive, directly and indirectly. When you build a canal to take away from the railroad the carriage of this coarse, heavy freight, such as coal, iron, lumber, hay, wheat, corn, oats, and the coarse grains, as they call them, you then give to the consumers and producers the benefit of that lower transportation, and you build up these cities; you increase and diversify the interests which can be maintained at these points; you bring to them a larger population, with more diversified tastes, more cultivated; the artisans get better rates of wages; everything is on a higher plane. That means that the railroads get the benefit of carrying higher classes of freight to those places, and instead of making this low percentage of earnings, they are making a much higher rate of earnings on their traffic to and from these points along the river line.

By the way, note the fact that Germany owns all her railroads—over 90 per cent of them, I think it is—and yet the German Government to-day is the most industrious government in paying out millions of dollars in building up her canal systems. Why? Because she has found that the building of these canals increases the earnings of her railroads. Mr. Thompson gave us the exact data up there just about three months ago. He showed that the earnings of the railroad companies along the river, after the canalizing of the river line, increased 40 per cent the first year and 50 per cent the second year.

Mr. HARDY. I am with you about your canal proposition; but I want to call your attention to some of the propositions you have made, and which I have also observed. I find the Nashville and Memphis proposition duplicated all over the country. For instance, I find that from St. Louis to Helena, Ark., because there are two river points, the freight on flour is 20 cents a hundred pounds, but the freight from St. Louis to intermediate points, where it is not on the river, is 60 cents a hundred pounds. I find that cotton, one of those great materials, pays 55 cents a hundred pounds for a 200-mile trip, while from Memphis to St. Louis it pays only 17 cents a hundred pounds. I find that the railroads are taking this freight away from the water by giving lower rates to water points and higher to the interior. I want to know if there is no other weapon in the arsenal of governmental power by which we can make these roads nondiscriminative, and when you do that, will not your canals be all the more valuable?

Mr. BASH. Yes, sir; that is absolutely a true statement. The only question is how to apply the remedy. We have been after them in every shape and form, but so far without results.

Mr. HARDY. I think we ought to build every canal this country is capable of, but we ought to regulate the traffic rates so that they would be nondiscriminative. Did not the Erie Canal in New York go into innocuous desuetude because it was knocked out of business by the railroads along it?

Mr. WHEELER. The Erie Canal? That is the only canal alive.

Mr. HARDY. I thought it had been very much more alive, but is practically dead now.

Mr. WHEELER. Oh, no; it is one of the best canals in the country.

Mr. HARDY. I know that is a great waterway, but I thought that had been hampered; I do not know about that.

Mr. WHEELER. No, sir; I am from the State of New York, and I know about that very well. If there ever was a thing done in the State of New York that was wise it was to build that canal.

Mr. HARDY. I think every canal is wise.

Mr. WHEELER. It built up the State of New York and built the line of cities the whole length, from Buffalo down, and, what is more, held the railroads up to a 2-cent rate.

Mr. HARDY. I only know about this case down here.

Mr. BURTON. Held the railroad up to what?

Mr. WHEELER. To a 2-cent rate.

Mr. BURTON. On passengers?

Mr. WHEELER. Yes, sir; when they got their charter the State owned the canal, and they were held to that rate.

Mr. BASH. When you mention New York, I am reminded that Mr. Wilson, of the Wilson Produce Company, of Brooklyn, visited me several months ago and called my attention to the fact that you have one advantage to the canal down there that I had never thought of. He said, "In the fall, just before the close of navigation, our farmers and dealers along the canal bring in thousands upon thousands of bushels of potatoes and store them in these canal barges. They store them there all winter, and in the spring take them down to tide water, and they charge, for an 8,000-bushel barge of potatoes, \$375 for the entire freight charges of delivering it into New York Harbor, including the winter storage." Just think what that means. Think what that would mean to us through Ohio and through Michigan and up into Wisconsin and in the great potato country; think what that would mean to us to have those advantages. You can not begin to account for the millions and millions of dollars that would come to us in increased wealth—to us internally here without exerting one bit of energy. It would come to that.

Mr. Davidson asked the question this morning as to what freight would move over this canal, what would be the tonnage, and so forth. One-sixteenth of a cent will divert all the grain traffic, meat products, all dead freight, in fact, one way as against another every time; and why? That is, provided, of course, that your deliveries are good at the other end and that the stock gets through in merchantable condition. Why? Because business nowadays is done upon fractions of a cent; it is not done upon 5 or 10 or 15 cents a bushel. When it comes to water freights you load a shipload or steamer load of wheat at Duluth to Buffalo for $1\frac{1}{2}$ cents a bushel, and the same rate from Chicago. How is Chicago going to hold her place and compete with Duluth in that kind of a rate? The farmers away over in the Canadian Northwest can get their produce to market as cheaply as we in Ohio and Indiana, in the very heart of the best country on the face of the globe, can do it, but you put this canal there and you have got at the boys in the extreme Northwest, and you have that much advantage over them, and the fraction of a cent will come to the dealer in Chicago, and it will inure to the farming industries in these great Northwestern States.

I wanted to call attention to another thing in connection with these freight rates, and which will amaze you. A traveling freight agent of one of the largest Southern systems told me personally that he had conversed with a general freight agent of one of the Michigan roads and he told him to his face, orally—did not put it in writing, you understand—he had given orders to furnish no cars for hay until all other traffic had been supplied. What did that mean? That meant that every one of those dealers up there had his business simply paralyzed, and at our convention at Put in Bay men got up and turned as white as that wall when they recounted their experiences, and it was heartrending to hear them tell the stories, and they were all facts. They had the figures there to prove them. They had defaulted time and again on deliveries—could not make them. That works a hardship more than it appears on its face. That hurts the producer and that hurts the consumer. Hay jumped \$5 a ton in twenty-four hours in New York City, and every consumer there had to pay the advance. Why? Because of the inability of the roads to get it

through to him. The same thing has occurred in New Orleans in the last few days. The market jumped up a few dollars a ton, and why? Because an embargo has been put on every railroad running into that city in the last six months, and only a few days ago it was raised on the Illinois Central. Who suffers? The farmer who raises the hay and the consumer of that hay who is dying for it in New Orleans; he is suffering. How are you going to remedy it? The same way, only by deep-water canals, because that gives capacity for this freight, such as hay, and then gives these surplus cars to the handling of this higher grade of freight. It is a simple proposition, is it not? And it will work; it can not help but work.

Mr. HARDY. How you will stop that discrimination I do not know, but that will be stopped.

Mr. ROTHERMEL. I would like to ask you another question. It seems to me that the railroad companies encourage the development of these waterways, do they not?

Mr. BASH. Yes, sir.

Mr. ROTHERMEL. And there seems to be opposition on their part to the carrying of freight by the trolley companies?

Mr. BASH. Yes, sir.

Mr. ROTHERMEL. How can we reconcile that?

Mr. BASH. Just like the boy who said, "Over across the street that is my father," but he was not his father at all. That boy lied, that is all.

Mr. ROTHERMEL. I know; but why do they object in the one case to carrying freight?

Mr. BASH. Some of them do think candidly that it will injure them, but those are the shortsighted men. You have them in your midst; you have them in the railroad companies.

Mr. PROBASCO. There is no electric road that is transporting large quantities of grain or other material?

Mr. BASH. No.

Mr. PROBASCO. It is more the farm produce; it is more express matter, and such things. They are not transporting any heavy stuff.

Mr. TAYLOR. Until recently the railroads have fought the canal proposition to the bitter end. The New York Central made an effort to kill the Erie Canal; even went so far as to get a bill through the legislature that no company should run canal boats there that had a capital of more than \$50,000, and in every way tried to kill the canal; and in the last few years, since they have seen the condition and faced the fact of their own inability to handle the traffic, they are coming around to the other position.

Mr. BURTON. They are willing and anxious for the construction of canals because of the fact that the great increase of business has made it impossible for them to carry all kinds of trade.

The CHAIRMAN. I have noticed this. The first years I was on the River and Harbor Committee Mr. James J. Hill made an address before the committee in which he said that you could plaster the bottom of the Mississippi River and then you could not hold water enough in it for transportation. But Mr. James J. Hill has been before that committee and various water conventions advocating extensive improvements of the Mississippi River, and no one has heard him say a word in favor of any waterway that parallels his railroads. It is only to take the commerce after it gets to his terminal.

Mr. BASH. That is correct. I want to file with you a letter from Mr. D. J. Donovan, of Chicago, with reference to this deep waterway canal.

(The letter referred to is as follows:)

APRIL 24, 1908.

Mr. C. D. CAMPBELL,
Care of Messrs. W. E. Webbe & Co., Chicago, Ill.

DEAR SIR: Deep waterways—referring to the completing of a canal, Toledo to Chicago via Fort Wayne.

This project has been under consideration for a great many years. It would greatly shorten the distance between Toledo and Chicago. It takes now about three days for a steamer leaving Chicago to reach Toledo. With the completion of this Toledo-Chicago canal to a depth of 14 feet the trip ought to be made easily in one day, and on a 14-foot draft of water steamer can take 2,000 tons, say approximately 80,000 bushels of corn, and it ought to be the means of reducing the present level of rates for transportation as well as opening up territory between Toledo and Chicago and bringing it nearer to the eastern and export markets.

Since the Canadian canals between Lake Ontario and Montreal have been open (the depth of water is 14 feet) Montreal has become more and more an important factor in export trade, not alone in Canada, but from the northern section of the United States. The freight rates at present in existence through all the waterways from Montreal are something like 2 cents lower than lake rates, plus the all-rail rates at and east of Buffalo. This condition of affairs is sending the greater portion of the products of the United States for export via Montreal.

The Canadians have also projected a canal from Georgian Bay in connection with the Ottawa River through Montreal to a depth of 20 feet. When completed, this will enable a steamer to load at any Great Lake port direct to Europe without breaking bulk and on a very low rate of freight.

The progress made by the Canadians in developing their waterways has been a marked factor in the development of Canada, particularly in their grain export trade, which is constantly growing in volume as years pass by, and if the northern section of the United States is to hold its own in the export trade and in the domestic trade as well it will be necessary to take such steps through the building of waterways in the United States that will enable freight to be carried at as low a rate as can now be secured through Canadian waterways.

If such a work as the Chicago-Toledo Canal were completed it would be of vast help in developing territory in northern Indiana, Ohio, and southern Michigan, and enlarge the markets for their produce in the farther Eastern States, as well as bringing them in closer touch with the importing countries of Europe.

The importance of water communication in the development of traffic is evidenced by the work done by the Government in the Allegheny and Monongahela rivers and in the Ohio, which has enabled the coal producers of West Virginia and Pennsylvania to ship their coal in barge flotillas direct to New Orleans at a rate of freight that is phenomenally low and which has brought to the coal producers of these States the markets of Louisiana and Mississippi.

The Saturday Evening Post, of Philadelphia, some three or four weeks ago had an article on the development of this traffic which might prove of interest. It also in this article showed the proposed improvement of the Mississippi River north as far as Minneapolis and in connection with the Illinois and Drainage Canal system through to Chicago. United States Senator Newlands, chairman of the Deep Waterways Commission, and this committee, I believe, has reported a comprehensive measure for the improvement of the waterways of the country which will bear on the subject referred to in Mr. Bash's letter.

The States that would be principally affected by the proposed improvement of waterways will be Minnesota, South Dakota, Nebraska, Iowa, Illinois, Indiana, and Ohio. These are principally corn-growing States and are as well important wheat producers. By referring to Howard Bartle's book it will give the yield of the various cereals in the States referred to.

Yours, truly,

D. J. DONOVAN.

The CHAIRMAN. In my judgment that Georgian Bay Canal is a more important thing for the United States than they have yet begun to realize.

Mr. BASH. That is correct.

The CHAIRMAN. The future of the State of New York is at stake on the success of the Georgian Bay Canal.

Mr. BASH. Yes, sir; that is absolutely true. I spoke to Mr. Taylor on the car last night and called his attention to the fact that eight of these States, the north central States—Ohio, Indiana, Illinois, Iowa, Kansas, Nebraska, Missouri, and Wisconsin—raised over 50 per cent of all the corn that was raised on the entire face of the globe. The little State of Indiana raised last year twice as much corn as was raised in the Argentine Confederation, more than twice as much. In other words, Argentina raised only 67,000,000 bushels last year, and Indiana 168,000,000. This data all brings vividly before you this fact, that the corn belt of the whole world is in the United States, and that it is focused and concentrated within a very small area.

We all personally know that where corn is king, as it is over the entire globe, there will be the seat of your greatest production of live stock of every kind, nature, and description; there will be the seat of your greatest wealth, beyond any question, and you can not avoid it; it will go there naturally and in spite of you. This little area in our Central West contains over one-third of the population of the United States now. We claim that by putting this system of deep-water canals in here that we will make a saving that every year will amount to more than the cost of these canals to this immense total of freight that is raised in the North Central States. We claim that the raising of this grain there and the raising of this live stock will make this absolutely the future center of the commerce, of the culture, and of the wealth of the entire United States, and in years hence you will find some gentlemen who will bob up in the general assembly here and ask that the capital be moved from Washington west on the banks of the Mississippi.

The CHAIRMAN. They are considering that very seriously now. [Laughter.]

Mr. BASH. That will come; it is no dream. When you stop to think these twelve States contain 220,000,000 of the 414,000,000 acres of cultivated land in the whole United States—in other words, they have over half of the acreage of land in the United States under cultivation to-day; of the 16½ billions of improvements upon the land in the United States, these twelve States own 9½ billions, over three-fifths, almost; of the farm implements and machinery, these twelve States own 3½ million out of 7½ million dollars' worth; they own one-half billion of the entire live stock of the whole United States, which amounts to about 3,000,000,000. They produce one-half of the milk that is produced in the entire United States, or 3½ million gallons; they produce 3½ million pounds of butter on their farms. They have 123,000,000 of the 233,000,000 chickens in the whole United States. In other words, they hold the balance of power right straight through. And when we come to grain, or to hay, first, to start with, these North Central States produce 49,000,000 of the 61,000,000 tons of the hay that is produced in the entire United States. Think of it, gentlemen, four-fifths of your entire tonnage of the heaviest crop in tonnage that is produced in the whole United States, hay, is produced in these little twelve States. Can you not readily see what it means for canal waterway advantages to such a tonnage as that, and when I cite the fact that one dealer ships one thousand cars of this commodity out of one county, do you not begin to realize what an immense tonnage there is in the business

and what an immense use there is for this commodity? When we come to corn, we find these twelve States produce 1,941,000 of the 2,666,000 bushels of corn raised in the entire United States, about four-fifths. They produce 441,000,000 of the 668,000,000 of wheat and so on down the line.

When you take these facts into consideration, this immense tonnage to be moved, and when you understand also the fact that by far the largest part of this wheat is shipped away from the farms; it is not consumed on the farms, it goes to the mills, or to export, or to neighboring or sister States; in other words, it is all moved over the railroads; when you boil down all this information and see these facts staring you in the face, that all this produce must be moved, then you will see the importance of waterway transportation.

Waterway transportation, gentlemen, means a more equitable distribution of the wealth of this country, and that is more important than anything else that we sit here to listen to, a more complete and equitable distribution of wealth which we are piling up here. It is not right that one or two men should sit in New York and should daily mark up the value of their securities and issue more and more securities, and then hand them over to some foreign count to be taken out of the country. There is no equity or justice in us having to sit here daily at our desks, and the farmer baring his head to the midday sun and plowing and reaping, to give it up to two or three transportation companies; that is not right, and it is time it was stopped. Recently the railroads have put into effect some more new rules raising the minimum amount which you must put in a car. Beans only recently have been raised to 40,000 instead of 30,000, which has driven one wholesale grocer out of business, a personal friend of mine, and it is driving them out all over the country. The Wabash Railroad have a rule that you must load a car to its marked capacity, and if that car chances to be marked "80,000" you must put in 80,000 or pay freight on that, and the law is fixed, like that of the Medes and Persians. I turned down three cars, one after the other, until I could get one to fit the amount of grain I had in the elevator. That is a fact.

Mr. WHEELER. That is one way of raising the freight rate.

Mr. BASH. Just exactly, and during all this agitation the railroad rate has not been decreased one fraction of a penny, but they hire these men to sharpen themselves pencils to figure up all these schemes day and night [laughter], and we sit here and suffer; we sit by idle and suffer. It is a fact. What does that do? It is driving the smaller elevators out of business. Gentlemen, this is a serious question, for when you drive out of business the small producers, the small handlers, you are working an injustice against your own people and against a people whom you can not get along without. You have to have the middle men to distribute these products. You can not drive the country storekeeper out of business and say, "You must go to a department store and buy all these things, and if they have not got it on the first floor, go up to the eleventh until you find it." It is not right; it is working injustice against the entire business interests of this country, and eventually that policy will fall back heavily upon the very men who are now fostering it and driving the country to it. It will react; it is bound

to, for you can not drive these men out of business without suffering the penalty.

I wanted to call attention to the question of freights, just the question of freight on coal. We handle a little anthracite coal every year to sell in our markets to some of our neighbors and friends for our own use. We find the rate on coal from the mines to Buffalo is \$1.50. We find the freight on coal from Buffalo to Fort Wayne is \$1.50. We find that if the coal was loaded on a boat in Buffalo and sent to Duluth it would go for 30 cents. That is the difference. It does not require very much skill or very much knowledge to figure out what kind of a saving there would be to the people of this Middle West if they had canal barges that they could load at Buffalo and bring all the way through to these points of distribution.

Mr. HARDY. You carry your coal from Buffalo to Duluth for 30 cents, but if you carry it to Fort Wayne by rail it is \$1.50?

Mr. BASH. That is correct.

Mr. WHEELER. Is that the freight rate, 30 cents?

Mr. BASH. Yes, sir.

Mr. BURTON. It is \$1.50 from the mines to Buffalo?

Mr. BASH. Yes, sir. In other words, our freight is \$3 from the mines to Fort Wayne. Excuse me, it is higher than that; it is \$3.50 a ton.

Mr. HARDY. Where is your mine, in Pennsylvania?

Mr. BASH. Yes, sir.

Mr. WHEELER. I think they carry coal for 80 cents from western Pennsylvania to Buffalo.

Mr. BASH. Soft coal?

Mr. WHEELER. Yes.

Mr. BASH. That is a great deal cheaper. Soft coal will not stand the transportation charge. The freight rate is made with respect to what the consumer will stand.

Mr. BURTON. Let us get that understanding. You buy a carload of coal at Wilkes-Barre; that is the region, is it not?

Mr. BASH. We buy through a Binghamton man; I do not know where he gets the coal.

Mr. BURTON. It is in the hard-coal region—and you pay \$3.50 by rail to Fort Wayne?

Mr. BASH. Yes, sir.

Mr. BURTON. What do you mean about the 30 cents?

Mr. BASH. I mean if that coal was loaded on a boat at Buffalo you could ship it to Duluth for 30 cents a ton.

Mr. BURTON. You pay how much to get to Buffalo?

Mr. BASH. You pay the same rate to get to Buffalo by rail as to Fort Wayne.

Mr. WHEELER. You are sure that rate is right—30 cents?

Mr. BASH. Yes, sir. I will make you a present of the Capitol building if I am not right; it has been quoted so often. You can figure that that is true, when they carry a bushel of wheat for a cent and a half from Duluth to Buffalo.

Mr. WHEELER. I expect for a cent, sometimes. We have carried coal from Buffalo to Green Bay for 40 cents a ton, and thought we were doing fairly well, but I did not know it got down to 30 cents.

Mr. BASH. That is what it is quoted.

Mr. HARDY. What is the rate by rail from Wilkes-Barre to Duluth?

Mr. BASH. I do not think they ship it.

Mr. HARDY. They come down to meet water rates when it is necessary?

Mr. BASH. I do not think of anything else, gentlemen. I have a lot of statistics here, but it has been gone into so thoroughly I do not care to bother you longer. I want to dwell on this statement I have made about the distribution of wealth and of driving the smaller dealers out of business, and I want to fix that in your minds. I think it is the greatest crime to-day that is done by the railroad companies or anyone else. That is the system which is bringing about this condition of affairs. It is serious; it is serious, gentlemen, when you go to absorb the whole business interests of this nation and to drive out the smaller dealers and to concentrate all of these things; you are only putting the strings in the hands of the people who can draw them at their will and stifle and throttle competition at their own sweet pleasure.

Mr. CHANEY. Do you think the passage of the parcels-post bill would help out any?

Mr. BASH. No, sir; I do not think there is anything that you or I could think of if we would eat head-cheese to-night and dream all night that would solve this like the deep waterways. [Laughter.]

Mr. PROBASCO. As regards the cost of such service, I want to say that the engineer of the board of public works of Ohio told me that he understood that the cost of the constructive survey of these roads across Ohio was about \$18,000. I want to say this, that if, in the wisdom of the committee, they can, without damage or detriment at all to the gentlemen from Fort Wayne, add to this bill a provision that there shall also be a survey of this Miami and Erie Canal route, they will confer a benefit on that country. I want to say further something which I forgot to mention, that about a week ago Secretary Taft, in a speech before the Chamber of Commerce of Cincinnati, said that two great things confronted this country; one was the subject of waterways, and the other was the subject of irrigation.

The CHAIRMAN. I think we are all united on the subject of waterway improvement. I have served ten years on this committee and on the Rivers and Harbors Committee, and my entire work has been on this subject, and I am very familiar with the benefits to come from it, as spoken of by Mr. Bash, in a general way. I think the thing you want to bring out in this hearing, in connection with this project, with all due deference to what has been said, is the fact that this particular canal from Duluth to Chicago will cheapen the cost of transportation, and hence carry the commerce as against the existing water route by the way of Mackinaw Straits, and we have not heard anything on that subject.

As I stated this morning, we can be friends of waterways and of hundreds of projects, but we inquire whether our first duty is not for those localities where there is no existing waterway, and where the establishment of it will bring benefits to the people as against the attempt to improve an already existing waterway by shortening the course, that you can carry wheat from Chicago to Buffalo for a cent and a half a bushel on an average, and that you can carry coal from Buffalo and from Lake Erie ports to Chicago, Milwaukee, Green Bay,

and Toledo and Superior for from 30 to 40 cents, as you can have the benefit, and the whole territory tributary west of those Great Lakes, as Chicago becomes the shipping point in connection with the system of waterways. Now, you are asking us to shorten an already existing water route by way of the Mackinaw Straits, a distance of 400 miles, by the construction of a canal necessarily narrow in width, necessarily consisting of some locks, all of which necessitates the slow movement of the vessel, as against the more rapid movement in the more open water, but that is the practical question. I am directing your attention to that, because it is fair to you. If we report this bill and undertake to follow it on the floor of the House and ask money for a survey, and later, \$50,000,000 for the building of a canal, we have to give a reason, for which the committee must be fortified with facts. There is no doubt that it would be a benefit to Fort Wayne and all those cities.

Mr. BASH. That is a mere bagatelle. Here is the benefit. The entire corn-producing area of the United States lies wholly south of Chicago. The natural trend of that entire tonnage and of that entire output is via the line between Chicago and Cincinnati. That is your east and west natural route of all that traffic. There is no question about it but that by shortening that distance by 400 miles, by lessening the time of the transportation of that product, even though it should go by the gateway of Chicago, you are aware that time nowadays is the essence of all things; time—it is the great fight against time to-day; that is the fight we are all struggling against; it is time. That is what made all these losses of millions of dollars to the corn crop, the time taken in transporting it. It has gotten out of condition, it has rotted, it has heated, and it has sold for a song, some of it not paying transportation. So we say to you that this gateway being open to the West to take care of this tonnage would mean a saving of millions and millions of dollars to this country. Mr. Taylor also called attention to the fact that your water navigation would be open one half longer every year. What does that mean? You all know that when the water navigation closes that every man in business is served with a notice that freight rates are advanced so many cents per hundred on a certain day when water navigation ceases. Is it any trouble to convince Congress or any other body of men who give a particle of thought to this question that the saving in the rate of freight for this fifty-one days will pay interest and a big amount on the principal of the entire construction of that canal alone every year, let alone the millions upon millions of indirect benefits that must necessarily come to these people, both east and west, who are all interested in this canal?

The CHAIRMAN. What is the rail rate between Chicago and Toledo?

Mr. BASH. From Fort Wayne to Buffalo is 9 cents; Chicago would be about 10 cents per hundred.

Mr. WHEELER. Did you mean from Chicago?

Mr. BASH. From Chicago to Buffalo would be 10 cents by rail. We take 90 per cent of the Chicago rate; that is correct. The Fort Wayne rate is 90 per cent less than the Chicago.

Mr. CHANEY. Ten per cent less.

Mr. BASH. The Fort Wayne rate to Buffalo is 9 cents; the Chicago rate to Buffalo is 10 cents.

The CHAIRMAN. That is the all-rail route?

Mr. BASH. That is the all-rail route. Can you just get a pencil here and figure on the tonnage, what that saving will be? Ten cents a hundred, and on oats a cent or a cent and an eighth a bushel, or ten cents a hundred. It is 75 per cent increase. I would not have much trouble to convince a business man of a proposition of that kind. He would fall over himself to grab it.

Mr. WHEELER. I am a business man. You can carry corn for a cent and a cent and a half a bushel from Chicago to Buffalo. Have you any idea that you could carry it cheaper if you had the canal?

Mr. BASH. Yes, sir.

Mr. WHEELER. Why?

Mr. BASH. Because you save a coal bill of \$2; you save the wages of seamen for two days; you shorten the route; you save time, and time is the essence of all things.

Mr. WHEELER. That is all right, but how much do you gain? You can tow 10 miles an hour through the Lakes; you can tow, say, half that through the canal. How much do you gain? Your coal is a little lighter, it is true. I can not see where you figure it from Chicago.

Mr. BASH. I am not figuring at all. This immense tonnage is going to get to Chicago.

The CHAIRMAN. The grain that is tributary to the Ohio River points is not benefited by this canal?

Mr. BASH. Yes; it will be benefited clear to New Orleans. That is the beauty about this whole system. Railroad rates are made in a kind of zone. If they find that grain, for instance, can be shipped for a certain rate of freight by lake, then the territory tributary to that lake for so many miles distant back would be a certain rate less, as much less as they can make it and meet that, and where the management make it to meet that. The railroad management says to themselves, "If we must make that kind of a cut there, we can not well advance that rate just immediately beyond that zone. We will have to make a gradual raise in that rate so that the next zone or belt gets a proportionate cut." So it goes down and down until it gets to the Ohio River. That is the way it will work.

The CHAIRMAN. Chicago and Toledo points now have the benefit of water-transportation rates?

Mr. BASH. Yes.

The CHAIRMAN. And the zone that circles out from Chicago, the lower end of Lake Michigan, takes in a portion of Indiana and Illinois and the territory west?

Mr. BASH. Yes.

The CHAIRMAN. The point I am getting at and I want information on is what proportion of these five States that produce this tremendous amount of produce that goes to the eastern market for consumption or export would go to Fort Wayne and hit the canal, as against Chicago and the existing water route?

Mr. BASH. Possibly not a pound of it would go to Fort Wayne, but if they found it could go to Fort Wayne, they would make a lower rate by the Gulf to meet it. The people in the West are bound to be benefited by that action no matter what you do. What I mean is that the building of these waterways exerts an influence on some other section of the country, and in that way they are benefited. Why can I ship hay to-day to New Orleans for 36 cents, while, if I go in the interior, it

goes up to 38 and 39 cents? Why should I pay a dollar or two dollars or three dollars a ton more? New Orleans does not eat all that hay. We know that. New Orleans does not consume it; it goes there to be loaded upon vessels; it goes to Cuba and to Porto Rico. There is an immense export trade. I have sold one man 100 cars to go to New Orleans, and every pound of it was exported, but you get the benefit of water rates. That old Mississippi River has saved millions upon millions of dollars to these people without their turning a hand, and as our friend here has truthfully said, port after port down there gets the benefit of these rates, even though they do not do any shipping, but it is not to keep them from doing it.

Mr. BIRDSALL. You would not advise the construction of this canal if there was to be no business there?

Mr. BASH. Certainly not. But our friend from Cincinnati failed to tell you one thing. Those 15 counties through Ohio have 45 per cent of the manufacturing of that whole State along that canal. Do you see what that means? It means that these canals build up and diversify these industries. We would have tanneries; we would have all kinds of factories built up along the highways, because we are close to where the hides are taken off. We would have all kinds of diversified industries located along these highways. I could not stay here long enough to tell you of the advantages that would come from such an improvement. If you have any doubt about it and give me twenty-four hours' notice, I will come to Washington and I will stay on the floor of the House until they vote for it if I have to stay a month. I will stay until I have convinced every man that it is right. I can give you figures, Interstate Commerce reports; I can give you railroad reports; I can bring you everything that will fortify me, so that no man will question the statement. They did it at Indianapolis when I appeared before the Commission. They said, "It is a fact; those statements stand," and they never refuted one of them. But it takes time to dig out these things, and a man who is working day and night in this struggle for these things can not afford to come down and labor with Congressmen. We say the Congressmen ought to come out to us and labor with us. I have a large farmhouse and will entertain every one of you free of charge for a month. [Applause.]

Mr. GILHAMS. I want to take just a little more of your time, but Mr. Ansberry has come in, and as he lives at Defiance, on this line, I want the committee to hear from him.

STATEMENT OF MR. ANSBERRY.

Mr. ANSBERRY. Mr. Chairman, canals have been used as a means of transportation as far back as history takes us. During the rapid development of this country railroads have, to a great extent, superseded and taken the place of canals, and in the minds of many people canals, for practical use, have become obsolete. During the last few years, however, people most interested in the ways and means of transportation have again turned their thoughts to the development and improvement of waterways. It is agreed by these people that to make a waterway adequate and profitable it must not only be large enough to accommodate the present traffic on its

line, but must anticipate the increasing traffic and size of vessels for the next twenty-five years.

I wish to call your attention to a few of the possibilities which nature offers for the construction of such a waterway between Lake Erie and Lake Michigan. Leaving Lake Erie at Toledo, following up the Maumee River by slack-water navigation to a point near the State line of Indiana; thence across the northern part of Allen County to a chain of lakes which cross the summit in Indiana; from the western end of these lakes down Turkey Creek to the Elkhart River; down Elkhart River to Goshen, Ind., at which place it would leave Elkhart River and follow parallel with it to the city of Elkhart; thence south of the Big St. Joe to South Bend; from this point across to Michigan City, which is 20 miles across Lake Michigan to the city of Chicago.

Anticipating the construction of a canal between Lake Erie and Lake Michigan, in 1829 surveys were made by Mr. Stanberry, United States engineer. The route selected by him was from Lake Michigan, through the Kankakee swamp, by way of the Tippecanoe to the Wabash River; thence by way of the Wabash and Maumee rivers to Lake Erie. The only data that I have been able to obtain as the result of Mr. Stanberry's work are a few elevations given by him on this route.

This work was again taken up in 1833, when two lines were run from Lake Michigan; one by the Kankakee to the Wabash River, at the mouth of the Tippecanoe; the other from Michigan City, by way of the Big St. Joseph and the Elkhart rivers, to Fort Wayne.

As a result of these surveys the Indiana legislature, at its session in 1836 and 1837, authorized the construction of a canal from Michigan City to Fort Wayne. This will be referred to further on in this article.

During later years some attention has been given to a route through southern Michigan from some point on Lake Erie or the Detroit River to Lake Michigan.

It will be evident that a discussion of this question involves everything north of the Wabash and Maumee rivers between the lakes. My attention was first fixed upon this problem in 1873.

During the year 1884, and from that time until 1888, I found myself in a position where I could collect data, and go over the territory to which such data referred. Gradually I have obtained a knowledge of the topography of the country, which I have since combined with a careful study of the geodetic and geological surveys, together with data upon railroads and other engineering enterprises at my command. In the discussion of the various routes, I will use only official and indisputable data as referring to elevations.

The elevation at Lake Erie is 573 feet above tide water. In following the route of the old Wabash Canal from Toledo to the mouth of the Tippecanoe River, we would cross the first summit at Fort Wayne, where it was 194 feet above Lake Erie; from there down the Wabash to the mouth of the Tippecanoe, it descends until we find the junction of the Wabash and Tippecanoe rivers 57 feet below Lake Erie. Passing back up the Tippecanoe we find the divide between it and the Kankakee 137 feet above Lake Erie, while the Kankakee at this point is 87 feet above Lake Erie, with the lowest summit between the Kankakee and the Calumet 144 feet above Lake Erie, while Lake

Michigan is only 12 feet above Lake Erie. There is no point at which it would be possible to carry a canal across the country from the Wabash to the Kanakee swamp, between Fort Wayne and the mouth of the Tippecanoe River.

It will be seen by looking at the map that this route is much longer than the one I have mapped out.

I have not given the careful attention to the routes through Michigan that I have been able to give to the territory in Ohio and Indiana, but I find that it would be necessary to pass through one of the three southern tiers of counties in Michigan in order to avoid the watersheds leading to the Saginaw Bay.

The highest summits which form the watershed between Lake Erie and Lake Michigan start in at the northern part of Hillsdale County; we find by taking 11 points on the railroads in this county that the average is 518 feet above Lake Erie. The average elevations in Jackson County are 441 feet above Lake Erie. It will be seen from this that the watershed in southern Michigan can not be crossed without reaching elevations of at least 450 feet above Lake Erie, and the chances for maintaining water supply on this summit are very hazardous.

It is impossible to discuss any route through Indiana north of the Wabash River without giving careful consideration to the peculiar characteristics of this territory which were brought about by the action of the glaciers. This part of Indiana is covered by glacial drift, varying in depth from 50 to 500 feet. The Saginaw glaciers entered Indiana first, coming through upper Canada, across Lake Huron; thence up through Saginaw Bay, whence they received their name, carrying their drift over Michigan, western Indiana, Illinois, and down the Mississippi Valley. These preceded the Erie glaciers, which traveled up the St. Lawrence Valley, through Lake Erie, whence they received their name, up the Maumee Valley, spreading their drift over two-thirds of Ohio and the greater part of Indiana. They banked themselves up against and spread over the Saginaw drift in northern Indiana, distributing a thick layer of sand and gravel, which to a great extent obliterated the glacial moraines, filling up the intervening spaces with said sand and gravel. The large number of small lakes in northern Indiana are very apparently the result of icebergs having become embedded in the then soft Saginaw drift. The sand and gravel from the Erie drift deposited itself around them. The gradual meltings of these icebergs are, in my opinion, the easiest way to account for the peculiarities of these lakes. We find the deposit of Erie drift at its lowest level at the Wabash and Maumee rivers, gradually raising and spreading out like a fan over northern Indiana and Ohio, extending into the southern tiers of counties in Michigan.

The drainage from this territory would naturally be toward the southwest, but the surface being so nearly level, it has found its way toward the northwest and southeast.

The early surveys through this territory were of necessity made without reference to such careful study of the topography of this country as has been given to it during the last forty years.

The route selected for the canal which was authorized by the Indiana State legislature started in at Michigan City; thence across to South Bend, following up the St. Joseph River to the Elkhart,

keeping up the Elkhart River and crossing the townships of Perry, York, Green, and Swan, in Noble County. It is said that over \$200,000 were spent upon this work in Noble County. The gentlemen who were principally interesting themselves in this work during this time became interested in railroad enterprises between Chicago and Fort Wayne, which may have had something to do with the abandonment of this work. It will also be seen that the State of Indiana had authorized the construction of a ship canal through its territory, ending at Fort Wayne, Ind., where it would intersect with the old Wabash Canal, where they were entirely dependent upon any action taken by the State of Ohio.

In 1839 at least 40 per cent of Noble County was waste land, the principal part of which was covered by water. The line proposed by the Indiana legislature is 20 feet higher than the route which I propose 15 miles south of it, which is accessible by leaving the Elkhart River at the junction of Elkhart River and Turkey Creek, following up Turkey Creek, to a point in Jackson township, Elkhart County. At this point the creek takes a circuitous route for about 16 miles, it being only 4 miles across at the nearest bends. We would cut across at this point coming into Turkey Creek again 5 miles from Syracuse Lake. Following up the creek to Syracuse Lake, through Syracuse Lake and Turkey Creek into Turkey Lake. Turkey Lake is 9 miles long and of an average width of a mile and three-fourths, and of an average depth of about 85 feet. Following the length of this lake and through a series of 15 small lakes, extending southeast from Turkey Lake along the Tippecanoe River, varying in size from 40 to 700 acres. These lakes include Little Turkey Lake, Loon Lake, Tippecanoe Lake, Crooked Lake, Cedar and Round lakes. Syracuse, Turkey, and Little Turkey lakes have their outlets through Turkey Creek and down the Big St. Joe River. The rest of these lakes have their outlets through the Tippecanoe River to the Wabash. The divide between these chains of lakes is a marsh, which is not elevated more than 10 feet.

Blue Lake at the eastern end of this chain of lakes is several feet lower than this chain of lakes, and has its outlet through Blue River to Eel River, thence to the Wabash. This lake is surrounded by high hills, and in my opinion, it can be brought to a level with the chain of lakes just described. This chain of lakes comprises the summit level of what I propose as the Erie and Michigan Canal. They extend for 26 miles across the summit of Indiana, being on an average 298 feet above Lake Erie, which would give the summit level of this canal an average width of 2,500 feet and an average depth of 60 feet. At least 12 feet of this summit level can be used for reservoir purposes. To this level can be brought the water from three-fourths of Noble, two-thirds of Steuben, one-fourth of La Grange, three townships in Kosciusko, and two townships in Whitley County. This territory would comprise over 500,000 acres. The northern part of this territory is, on an average, 165 feet above the summit level, and has scattered over it more than one hundred lakes, varying in size from 20 to 800 acres, all of which are accessible for reservoir purposes, and from 12 to 40 feet off their water at its present level can be brought to the summit level of this canal. Within 10 miles of either end of the summit level of this route, and from there on down, many times more

than enough additional water will be supplied to provide for the leakage, evaporation, absorption, and the extra lockage in such a canal.

The average annual rainfall in this territory for eighteen years is 37.90 inches. One-seventh of this rainfall on the 500,000 acres tributary to this summit level would furnish sufficient water to operate the canal, having locks 400 feet long and 45 feet wide, once every ten minutes during the year. It would be impossible to take up the details of the question of the water supply further, but my investigations have gone far enough to convince me that the supply is abundant.

From Blue Lake we make a cut east into Eel River Township, Allen County, following Willow Creek to the gorge of Cedar Creek, down this gorge to the St. Joe River; thence across to the Maumee River, at a point near the State line.

From this point down to Lake Erie there are two practicable routes—slack-water navigation by the Maumee River, or the route of the old Wabash Canal, which at the State line is within half a mile of the south bank of the Maumee River. The bed of the old Wabash Canal at the State line is 177 feet above Lake Erie, while low water in the Maumee River is 140 feet. It would be possible to carry this canal across the Maumee River down the bed of the old Wabash Canal to the junction, where it intersects with the present Miami and Erie Canal; from there down the Miami and Erie Canal to Defiance, where we would utilize the slack-water navigation in the Maumee River to Toledo.

If it seems preferable, the Maumee River can be used from the point at which this canal would cross by the way of Defiance to Toledo.

In order to give a practical idea of the elevations on this line, I will state that the summit level is not quite as high as the observatory on the top of the Masonic Temple in Chicago, and but a few feet higher than the water tower of the waterworks in Toledo, the lake at Chicago being 12 feet above the lake at Toledo. It would require but little work, other than dredging, to make the Maumee River from Toledo to the foot of the rapids navigable for large vessels. It will be necessary to lock around the rapids to the slack water of the Providence dam. Raising this dam 6 feet and some dredging will give sufficient slack water in the Maumee River to make that river navigable for large vessels from such dam to a point 2 miles above Napoleon. From this point it would be necessary to enlarge the present canal to a point 2 miles below the present Independence dam, at which place a dam can be constructed to raise the slack water of the Independence dam 5 feet higher than its present level, which would furnish slack-water navigation above the mouth of the Tiffin River west of the city of Defiance. Three more dams and the necessary dredging to straighten and deepen the Maumee River would furnish slack-water navigation to a point 2 miles above the east Indiana State line. It will be seen that this route proposes to furnish slack water and lake navigation for more than half of the distance between Toledo and Michigan City, by the use of which it will not be necessary to restrict the speed of boats.

To secure a 20-foot channel on this route there is no rock work between Toledo and Michigan City, excepting that at the Providence rapids. For anything over that it would be necessary to make the additional excavations out of the rock for 6 miles down the Maumee from the point at which this canal would enter it. The other excavations are confined to drift and wash.

The good to be derived from the construction of such a waterway would be the further development and improvement of the territory immediately along the line of such a canal by giving it better facilities for navigation, drainage, and water power. Other and greater reasons for the construction of such a waterway would be the shortening of the distance between Lake Erie and the southern end of Lake Michigan to 204 miles, whereas it is now 820 miles (a difference of 616 miles), giving the Government a waterway between Lake Michigan and Lake Erie, wholly within the territory of the United States; and the lengthening of the season of navigation at least one-third. The money now invested in vessels, docks, and other facilities for lake navigation, which would be brought into use one-third longer during the year, than they are at the present time, is at least five times the amount necessary for the construction and completion of such a waterway.

Time forbids a further discussion of the details of this route or the many reasons that might be given for its adoption in preference to the other routes which have been under consideration.

It would be idle to discuss the details of the question of cost until the most careful surveys have been made and accurate data obtained, but it is sufficient to say in regard to cost that this route offers water connection between Lake Michigan and Lake Erie at the lowest possible expenditure of money.

Fully appreciating the magnitude of this project and the many obstacles to be overcome, I expect to be severely criticised, and I shall always use honest criticism as a means of better preparing myself for overcoming these obstacles.

Mr. GILHAMS. I do not want to take the time of this committee. I had not expected to say a word here to this committee on the question of this canal at this time. I thought if it was possible to get a favorable report from this committee, I would be pleased to speak to this subject on the House floor, but just as a summary of what has been said here to-day, I would like to say to the committee that it appears to me that if we could get a canal—we are only asking for a survey—but if this Congress, or any succeeding Congress, should see its way clear to build this canal, that the fact that the building of that canal would divert the shipment of all the northwestern products to Chicago and to the east into New York State and keep it from going to the northeast through Canada would alone be worth the building of the canal. I tell you, gentlemen, that means a great deal to this country, and that proposition alone means the paying or the doing of this work, besides the great saving to the whole people of this community.

And again, it seems to me that, as Mr. Burton has said to me to-day—and I am going to reiterate what he said—that if this Congress should see fit, if it should be the purpose of the Congress whenever opportunity afforded to survey all possible canal lines to determine where there could be successfully a canal line made that would be profitable, and that in itself would be an investment of the country. If we could determine in this country of ours a great number of canal lines, those canal lines would be a great investment to our country, and it means in the future economy and saving in all lines of production. That in itself is worthy of the effort that we should expend to get a favorable report here from this committee for the survey of this line, to determine if this is a feasible project, and each line

determined—I am not speaking now as interfering with others—I mean all survey canal lines that could be determined in this country only add to the advancement of the economical and successful business wealth of our country. If we expect, as Mr. Randall said this morning, that the next great fight before this nation of ours will not be wars with guns, but will be a commercial war, and if we expect to succeed in the great fight of commerce in the coming years, we must have such freight rates in this country that we will be able to compete with all foreign countries, and the building of canals, and the securing and finding of a great number of canal lines means to push forth successfully in this great commercial warfare. So I say with Doctor Burton that we must consider this not as an expenditure of money, but this is an investment of the country, and the more successful canal lines that we can establish and maintain in this country the greater the wealth of this country.

In conclusion I want to say that it does seem to me that wherever we establish canal lines, or if we do establish canal lines extensively in this country, it means to put every watered-stock railroad on its real intrinsic value. They can water it as many times as they please; they may have watered it as many times as they could, but we will squeeze the water out of it and place every railroad corporation on its real intrinsic value as to freight earnings. That is what we can do. It will save this trouble of a great warfare on railroads in trying to establish true and just freight competition.

I want to thank this committee for the courtesy that you have all extended to me, and especially the courtesy that you have extended to my friends who have come from Fort Wayne to meet you to-day, 800 miles, and I want to say to you that behind this committee that has come here to-day is the city of Fort Wayne, of 65,000 people, who are looking forward to the final execution by this House of a bill that will grant a survey, which is all we are asking, but we do ask that. In the future, if it should be proved feasible by the engineers, then we will take up the subject as to pushing through the proposition of dredging, if it can be done. Gentlemen, I thank you.

Mr. CHANEY. How much money do you think it will take to make a survey?

Mr. GILHAMS. I have a rough estimate from General Mackenzie, and I know from the estimate he made that it would be plenty. He said he thought it would cost about \$100,000 to make the surveys.

Mr. WHEELER. That is the Miami Canal and all?

Mr. GILHAMS. No; the one proposed.

Mr. BASH. That should include the Cincinnati Canal; you have the data, though.

The CHAIRMAN. They have a canal there, and it is only a proposition of deepening that. We did not get any information as to whether they have any commerce on it or not.

Mr. ANSBERRY. Yes; they have.

Mr. PROBASCO. I do not know whether I have made myself clear. We desire, without doing any damage to the gentlemen from Fort Wayne at all, to ask that you consider the addition of the following language to this bill:

And to determine the cost, practicability, and most feasible means of enlarging the Miami and Erie Canal of Ohio so as to make it of sufficient draft to admit of barges or other craft navigating on the Lakes or the Ohio River.

(Thereupon, at 4.20 o'clock p. m., the committee adjourned.)

COMMITTEE ON RAILWAYS AND CANALS,
HOUSE OF REPRESENTATIVES,
Washington, D. C., Friday, May 15, 1908.

The committee met at 2.30 o'clock p. m.

Present: Representatives Davidson (chairman), Roberts, Knapp, Burton, Chaney, Wheeler, Patterson, Hughes, Hardy, McDermott, and Rothermel.

The committee thereupon resumed the consideration of the bill (H. R. 17417) providing for the survey of a ship canal from Benton Harbor, on Lake Michigan, to Toledo, on Lake Erie; the bill (H. R. 4065) providing for the survey of a ship canal from Benton Harbor, on Lake Michigan, to Toledo, on Lake Erie; the bill (H. R. 6148) to authorize a survey and estimate of cost of a ship canal connecting the navigable waters of Niagara River and making an appropriation for the purchase of an approved right of way, and concurrent resolution No. 18.

Mr. GILHAMS. Gentlemen, Mr. Fox, of Cincinnati, who was directed to come before this committee by Mr. Probasco (who was here, if you remember, a few days ago), happened to be here in the interest of some canal meeting in Washington, and desires to appear before the committee in behalf of this project. The chairman has kindly granted him five minutes in which to be heard.

The CHAIRMAN. Of course the feature of the proposition in which Mr. Fox is interested, or in which Mr. Probasco is interested, is to have an amendment attached to Mr. Gilhams's resolution providing for a survey for enlarging the Miami and Erie Canal, the canal extending the whole length of the State of Ohio, from the Ohio River across the State, touching the Maumee River.

STATEMENT OF GEORGE B. FOX, ESQ., OF CINCINNATI, OHIO.

Mr. Fox. Mr. Chairman, I did not expect to appear before the committee to-day; but I came on with the governor of Ohio to attend the deep waterways convention, the convention dealing with the conservation of forests, etc.; and before leaving we had a brief prepared by Mr. Probasco. I happen to have with me two copies of that brief and a resolution passed by the chamber of commerce, urging this matter; and I was asked to say something with reference to the tonnage of the proposed addition that we hope to have.

Our friend spoke a little bit ago of a large plant, the steel plant which is to be constructed up there. All of the coal to operate that plant must come from south of the Ohio River. When Major Chittenden made his report he spoke entirely with reference to the coal above Pittsburg. Since that time this entire country, West Virginia and Kentucky and Tennessee, has developed as good coking coal as they have around Pittsburg, if not superior. We have to-day coming in from Tennessee by rail, coal sold to the city of Cincinnati at a less price than the Pittsburg coal. Then, to show you what we are up against, I will state that I made a contract three or four winters ago, when we had this trouble with the Louisville and Nashville road, for a lot of coal for use up along our canal, based on a little lower price than I could get from Pittsburg, made by the Louisville and Nashville road in order to get the business. When the time came to deliver the goods, the Louisville and Nashville road said: "We can not deliver any more cars." I went down to the agent of the road, and said: "Here we have this contract; and the man that

made the contract said that you were morally, if not legally, bound to furnish material for this canal." He had forgotten about the arrangement that he made. The Louisville and Nashville decided at that time to send no cars north of the Ohio River. The result was that all the contracts made then were void, and we could not get the coal.

At this time we are receiving coal from Tennessee and Kentucky and West Virginia for coking purposes. We established at Hamilton, Ohio, three or four or five years ago, a large coking plant, and we have discovered by operating there that we can save the tar and the by-products and make coke that is cheaper for us to use than any coke that we can get south of the Ohio River. The result has been that the capacity of that coking plant has been more than doubled, and we are establishing there a steel plant, the first of the kind in the State of Ohio, which we will soon have in operation.

It is evident that if we can get this coal here cheaply enough to make our own coke, we can give a tonnage to this canal, even though it may be a 14 or 16 foot canal, of an amount sufficient to keep that canal just as busy as it can be, to take the coal from the foot of the Ohio River to Chicago and all these points where they must have it in order to make iron. There is no question at all but what all of the coal that makes iron has to come from south of the Ohio River. Major Chittenden, in his report (as you will see in looking it over), refers to the coal about Pittsburg, eliminating all of the coal mines that have since been discovered and which are able to furnish coal at as cheap a price if not cheaper than we can get it from Pittsburg. Of course in dry weather, with our very large barges, we can bring it down the river cheaper than we can with these smaller barges from the smaller streams through Kentucky and West Virginia, etc. But as a rule our coal comes out of the Kanawha River. The coal that we use along the canal now comes mostly from the Kanawha River, from West Virginia.

I want to say, so far as tonnage is concerned, that along this waterway up to Defiance, with the local traffic which is spoken of by Major Chittenden (and which is enormous), we have, along those 15 counties—I do not know but what Mr. Probasco made that statement—pretty nearly 50 per cent of the manufacturing interests in the State of Ohio. The tonnage along there is enormous. Take, for instance, the industry with which I am connected—the paper business. We had statistics taken, and we find that we will use from five to six thousand tons a day of raw material and the manufactured product that is manufactured along this canal.

Our great market, of course, is the East. We go up through New York and New York City. Strange as it may appear, we ship paper into Holyoke, the greatest paper-manufacturing center in the United States. We ship it out all up through the Northwest. What we want to get is, speaking personally, to get our product along this canal up into the Lakes, so as to reach the lake system. And whatever doubt there may be with reference to the route to the lake there is no question about the desirability of getting a canal up at Defiance and over to Chicago. That is the best and in fact the only way we ever expect to reach Lake Michigan and the Northwest; it is the only way we can possibly get over there.

Major Chittenden said in his report that along our route we could maintain a 10-foot canal and have probably 50 per cent more water

than we could use. I had Mr. Cooley (one of the greatest engineers that we have, I think) go over the matter during the last year or two, and he says that we can have a 16-foot canal, in his belief. I had an engineer go over our summit level (that is, the summit, what he calls the summit level—the upper part of the canal in the State of Ohio); and he tells me that he has no doubt in the world that we can double the capacity of the present reservoir system that the State now has, which is about 27,000 acres, giving, no doubt, a flow of water that will operate a canal throughout the whole year, going over to Lake Erie and the Ohio River, of from 14 to 16 feet depth.

What we are up against in the State of Ohio is that when our general assembly meets we have nothing positive to submit to the members of the general assembly. They come there and they are asked to vote on this proposition and on the general proposition of canals; and they say, "Oh, yes; both parties were committed to it;" and they make the appropriation. We go up and make the statement that we believe such and such things can be done. What we believe is the best thing to do (inasmuch as the General Government gave us a great many thousand acres, from which we realized from three to four millions of dollars, to build this canal, and one of the conditions was that we were to forever keep it open) is to have the Government make simply a survey that will be positive, that will be assuring, so that we would know what we have or what we have not got. Then, if the State of Ohio does not want to use the route for canal purposes, let them sell it out as an entirety for railroad purposes. What we want is transportation. But, of course, there is no question in our minds that this waterway is by far the best waterway, so far as concerns water, terminal facilities, and intermediate traffic, that can connect the lake system, which is first in importance, with the Ohio River, which is third.

So far as the tonnage is concerned, which the gentlemen seemed to want to know about and asked me to speak of, I want to say that we can furnish statistics to show that even though we had a thousand-ton barge canal, and could lock a boat through every half hour or hour, there would be more tonnage than the canal could haul.

I thank you, gentlemen.

**STATEMENT OF HON. CLARENCE C. GILHAMS, REPRESENTATIVE
FROM INDIANA.**

Mr. GILHAMS. As I understand, the Chairman, and, I presume, the committee, want to learn why they should give a survey to this line. That is, you as members of this committee would like to know if there is any substantial reason by which you could be backed up for granting a survey over this line. In other words, you would like to know what the probable income or the probable shipments over this line will be. No doubt you would not want to grant a survey unless you could feel assured that it was a worthy undertaking. For that reason I have appeared before you for just a few minutes to see if I could put together a few substantial reasons why this survey should be given.

As I said the other day, I feel that if we can prevent the traffic from the northwest of Chicago, in those Western States, from going over the Canada line and through the Canadian lines of water routes that are being built, and one of which is already built, that in itself would be a sufficient justification for the building of this canal. That, of course, is simply a statement. There are no figures behind

that statement. But it does seem to me that the loss of the traffic that would be diverted from our own States and our own cities by the building of those Canadian lines, which would carry the freights from the western and southern part of Canada and also the northern part of the Northwest States of the United States through Canadian lines, would be a terrible calamity to the Middle Western States, and would result in a great loss of revenue.

I might say, and I am going to say now, that the cost of the construction of this canal, as estimated by General Mackenzie, is about \$100,000,000. That is how he has roughly estimated this cost. But we are asking for this survey in order to more definitely fix and determine the feasibility and the cost of the canal, and also determine its size. We are asking, of course, for a 14-foot canal or a 16-foot canal, knowing full well that such a canal can be built for many million dollars less than a 20-foot, a 21-foot, or a 24-foot canal.

The Middle West to-day holds a quarter of the population of the United States, and comprises a fourth of the area of the United States, covering 753,000 square miles. Fifty years ago we were 30,000,000 in population; to-day we are nearly 90,000,000 in population. If we increase in that same ratio for the next fifty years, the middle Western States around west of Chicago and south half way to the Gulf of Mexico will hold nearly 100,000,000 of people. That means that the transportation in that region will be from four to ten times greater—yes, and it will be more than ten times greater—than it is to-day. We can not well afford to continue the building of railroads from Chicago eastward to Buffalo and Toledo to carry out that transportation. The expense is entirely too great.

I am not going to argue on the question of the difference between railroad and water rates. That, I know, this committee has already conceded. I tried to find out, in the short time that I had to find out, what the difference would be in the cost of fuel by way of this canal, if it is constructed, between Toledo and Chicago, and the cost of fuel around through the Straits of Mackinac to Toledo, the difference being 400 miles. I am going to hurry to this point, and I am not going to continue long, because what I am going to say here I feel bears directly on the proposition of why we should have this survey.

I have a letter here from Lyman Cooley, of Chicago, who surveyed and engineered the ship canal from Chicago to St. Louis and the Mississippi River. I asked him if he could possibly tell me the difference in the consumption of fuel between Chicago and Toledo by this proposed canal and by the route around the Great Lakes.

Mr. BURTON. You mean the cost of operation?

Mr. GILHAMS. Yes, sir; the difference in the cost. I asked him if he could tell me what the difference would be in the burning of fuel for the transportation of a given tonnage of freight from Chicago to Toledo via the canal and via the Strait of Mackinac, the speed being from 4 to 5 miles an hour on the canal and 10 miles an hour on the Lakes or on the open sea. He said that the difference in the consumption of coal by vessels carrying the same amount of freight between a speed of 5 miles per hour and a speed of 10 miles per hour would be in the ratio of 4 to 1. In other words, you would burn 4 tons of coal in moving a given cargo where you would burn 1 ton of coal in moving half the distance at 4 miles or 5 miles an hour. He said that the difference in the amount of coal burned in going from Chicago to Toledo by the Strait of Mackinac and going through the

canal from Chicago to Toledo would be at the ratio of 10 to 1. In other words, you will burn 10 times as much coal in going from Chicago to Toledo by way of the Lakes to carry the same tonnage that you would by going through the canal.

Mr. HARDY. Let me see if I understand you. Is it his position that a vessel making 10 miles an hour would consume four times as much coal as the same vessel going 5 miles an hour?

Mr. GILHAMS. Moving the same amount of freight.

Mr. HARDY. Moving the same amount of freight?

Mr. GILHAMS. Yes, sir.

Mr. HARDY. Then the more speed you get the more coal you use?

Mr. GILHAMS. That is the point exactly. Whenever you argue from the basis of the difference between the open sea and canals, because you can go faster on the open sea, then you must count the cost; and the cost in fuel is four times as much at 10 miles per hour as it is at 5 miles per hour.

Mr. HARDY. Four times as much an hour?

Mr. GILHAMS. Yes, sir.

Mr. HARDY. Making twice as much for the distance?

Mr. GILHAMS. Yes, sir; that would make it four times as much an hour for moving the same cargo.

Mr. HARDY. Yes.

Mr. GILHAMS. But taking the distance from Chicago to Toledo (the difference being 400 miles), to get the same cargo of freight from Chicago to Toledo you have burned ten times as much coal to get the same cargo there. Let us count the time the same. Counting the time the same through the canal or around the Strait of Mackinac, you have consumed ten times as much fuel. What that cost is I was unable to determine—how much coal per mile they used in a given amount of tonnage; and I have not yet been able to ascertain it. That was one reason why I was delaying this hearing. I wanted to get these things together. I received a letter this morning which gave me the tonnage by water from Chicago. The tonnage by water from Chicago is 11,410,470 tons—that is, of boats going from and coming to Chicago in the year 1907. I picked up this book here, which is the report of the survey of the canal that you were talking about a few minutes ago.

Mr. BURTON. This is the tonnage by water?

Mr. GILHAMS. Yes, sir; this is the tonnage by water. In a report given by Mr. Symons in 1896 he says that if the Erie Canal, by its improved depth of water of 12 to 14 feet, could carry 24,000,000 of tonnage, it would be ample to guarantee almost any expenditure of money for the reconstruction of that canal—24,000,000. And here we have, from Chicago alone, 11,410,471 tons of freight last year, with the great competition of the railroads running right along, paralleling one another, from Toledo to Chicago. They are putting their freights down as close as they can to these lake freights. And if we could get the canal we could carry the same tonnage in boats that would cost about \$8 per ton. I mean the boats required to carry this freight would cost 8 per ton of the tonnage they carried. The boats that are to-day carrying freight from Chicago to Toledo and Buffalo and the East cost from \$60 to \$75 per ton. It will be readily seen that you can not expect to get as low rates upon the Lakes to carry a ton of freight when the difference would be as 7 to 1. If we can have this canal we will have a difference in the cost of freights at the

ratio of 7 to 1, which will result in cutting the freight rates between Toledo and Chicago and Buffalo.

I could not secure the exact amount of shipping from Chicago by rail; but I want to read you this letter. It is from the Chicago Board of Trade, and is signed by Mr. W. E. Stone, the secretary of the board of trade. I received this letter this morning. It is written the 13th of May. He says:

The Central Traffic Association, which I thought would give me this information, informs me that the only way I could get it would be by corresponding with or making application to the various railway lines centering in this city. I doubt if I could succeed in getting this information even by applying to the various railroads. I have in the past made an attempt of this character without success.

This is the secretary of the Chicago Board of Trade, gentlemen.

For instance, I have been desirous to secure the amount of tonnage of coal received and shipped by rail; and while some of the railroads expressed their willingness to give me this information, some others declined, and a partial report, of course, was of no value.

They seem to try to keep the tonnage under cover as far as these heavy commodities are concerned—because, I presume, they feel that it will be used as an argument for the building of waterways.

Mr. HARDY. Have you no State commission or authority which is required to keep a record of tonnage of that kind?

Mr. GILHAMS. I have not got it here with me. I am just reading you the letter. I have here a report—and I am going to be brief about it, gentlemen. I do not want to tire you.

The CHAIRMAN. I think some of the members will have to go pretty soon, Mr. Gilhams.

Mr. GILHAMS. Yes, sir. Then I will not read these reports. But here is the amount for the year 1907 of grain shipped over the trunk lines east from Chicago, amounting to 1,176,000 tons.

A MEMBER. What are you reading from?

Mr. GILHAMS. This is the Monthly Summary of the Internal Commerce of the United States. It is from the Department of Commerce and Labor.

There is 1,176,000 tons. If we could vary the cost of carrying that tonnage a fraction of a cent per bushel on grain, it would all be carried by water. If we could vary it a fraction of a cent, that result would follow; and they are carrying it to-day from Chicago to Buffalo from $1\frac{1}{2}$ to $1\frac{3}{4}$ cents per bushel, contract price.

Remember that while the railroads are carrying a large amount, and much the largest amount, of the tonnage east, they would have to surrender a great proportion of this if we had an opportunity to cut the lake rates much lower by that canal, which means millions and millions of dollars to the producers of these commodities in this whole country and a cheapening of the price to the people of the East.

That is as far as I am going to talk about the question of tonnage. The tonnage, though, is simply enormous between Chicago, Toledo, and Buffalo, and will be under this proposed route.

Now I am going to talk to you about the question of vested rights—I think that is the term the lawyers use. I am not a lawyer. But this thing came to my mind: I know that in the States of Ohio and Indiana the Miami and Erie Canal Company are going to press hard to secure better canal privileges than they have. I know that there is an effort being made now to have Congress pass a bill to open a

river from Indianapolis up toward this proposed canal which I am talking about to-day—this Michigan and Erie Canal from Indianapolis, on the White River. Why do they want to get here? Because they know that it means everything to that part of the country. I know that the people are very anxious to have a canal constructed up the Wabash River from Terre Haute, and come on north until they can reach this line and get into Chicago. This means a great development of waterways in that part of the country, which means millions and millions of dollars, not only to the people in that region but to the whole eastern country and to the whole western country. It is not simply of local importance, but the opening of these waterways means giving everybody an opportunity to secure transportation for less money than we pay to-day. It means the cheapening of the price of every commodity.

That is not all. If we wait and delay this survey, these companies will build small canals. They can not afford to build the canal that we are looking for; but they will go up the Maumee River to Fort Wayne, and they will develop from Fort Wayne out to Defiance, where the canal is already opened; and then they will have secured all the rights of water power and all the benefits that may be derived from securing those vested rights that become theirs and become private property. I hope this committee will see that if you will give the people this survey we can, by this survey and the construction of this canal, secure all these rights; but if these canals are built by private parties, they can build to the levels of this canal as constructed, in order that they may get the water from this canal to assist them in bringing their freight to and from these points. But if they should build their canals before this survey is made, it means that their levels would be put in such a condition that they may raise them too high or they may put them too low; and they would ruin that grand field right in the middle of the State of Indiana and the northern part of Indiana, where we have one level of country covering an area of 200 miles without a lock. That one lock level of 200 miles means a lake 10 miles long, 14 feet deep (or whatever the depth of the canal is), and 1 mile wide. That is the volume of water lying there in that one lock level. And you readily see that if a new canal should change its level below that or above it we could not get our canal on the level that we can build it to-day without buying out all the rights they had and paying them for the damages that would ensue from changing the levels of their canals; and it would cost the price of this whole construction if we build it now. But if we do not build it now, and simply put the survey through there, and the level is established now, the estimate of that level and the beginning of this proposition and the expenditure of \$100,000 will be the best possible investment. As Doctor Burton said, it is not a loss, but it is a magnificent investment to the people and to the country of the United States. So I say let us have this report; let us have a favorable report of this bill now.

Then you must consider the water power that will be gained on that canal with a column of water 174 feet high (because that is what it means). I asked Mr. Cooley the amount of electrical power that could be developed, and here are his words. He says:

You state the summit level at elevation 174 feet, and the water supply thereon at 2,500 second-feet.

That is the amount estimated by the Government survey, by the Government measurements. These rivers have all been measured, every one of them; and this is at the time of lowest water.

This would produce 37,000 to 38,000 electrical horsepower, and accessions of water in the descents would raise it to over 40,000 horsepower.

After we left the 110-foot level there would be other rivers running in; and by the accession of some water as we kept coming down it would increase the water power to 40,000 horsepower.

As going concerns—

These are exactly his words—

As going concerns these powers should be worth not less than \$400 per horsepower, or \$16,000,000.

That, gentlemen, would be taken up, and the public would be robbed of the privilege of that water power if we failed to make this survey and construct this canal. That means that if this canal cost \$100,000,000 its revenues would only have to be \$3,000,000 a year in order to pay the interest on that investment. Here in the water power alone we have \$16,000,000, figured by the greatest engineer in the United States.

I asked the same question of General Mackenzie, of the War Department, whom you know well. He did not know that I had asked for these figures from Mr. Cooley; and I am going to read you just what he says in regard to the water power. I made the same statement to both of them. He says:

The electrical power which would be developed is estimated at about 1,700 horsepower per lock, or about 34,000 for the entire canal.

The other man says from 36,000 to 38,000 horsepower. Mr. Mackenzie does not allow for a particle of gain in the flow of water as we drop down to the other levels and other streams come in. I figured, in my letter to him, on 2,500 second-feet at the summit level, and we will gain more water as we keep coming down. So you see they practically agree as to the amount of water power. But Mr. Mackenzie did not figure the amount of electrical power, nor did he figure as to the amount of going horsepower. But I figured it, and at his figures it amounts to \$13,600,000 for the value of the electrical power.

What does that mean? That means that there is enough electrical power there to carry all the boats that would ever pass through this canal without any cost for fuel in the shape of coal. In other words, it will conserve to the people of our country these natural resources that we have just had this meeting of the governors of our United States to consider. It means a saving in that direction, and it will also save from private corporations this great water power, which is worth itself, not considering any other point, the whole cost of the survey and the construction of this canal.

I am going to read you a few more words that Lyman Cooley says. He says:

I have been disposed to consider the Michigan-Erie Canal as an important part in the development of an internal waterway system. In connection with an enlarged Miami and Erie Canal, from Defiance to Cincinnati, it would reach the Ohio River and one-third the industries in the State of Ohio; and I have clients along this route who expect soon to take up this phase of the matter.

This is what he says to me:

It would also coordinate with a route through the Wabash Valley from both Lake Erie and Lake Michigan, with the Ohio River at Evansville; and this interests the State of Illinois, which is now evolving an internal waterway policy.

In connection with this canal from Chicago to the Mississippi River, and this proposed canal from Chicago to Toledo, the difference in the amount of freight that would travel over either one of those lines is almost incomparable. The freights moving from Chicago are practically all going east, and they will not travel over the ship canal from Chicago to the Mississippi, although I am not saying one word against the construction of that canal. I think it is a good thing, and Chicago really needs it as an outlet anyway.

I just want to read Mr. Cooley's closing words:

In connection with our Illinois projects, I have been giving large attention to the collateral resources which may be developed as the incident of a waterway system, and I have reached the conclusion that upon many available routes what may be called the by-products—

That is, the electrical power, etc.—

Will exceed in value the cost of the waterway development per se, and that all waterway schemes should take into consideration all accessory advantages, in order that our internal resources may be more completely exploited. The waters of the United States are next in value to the land, and when all their utilities are realized and put to beneficial uses, the water routes will again become the controlling factor in our evolution.

That is from Lyman Cooley.

I have a letter here which I received this morning from a shipper in Chicago, from the board of trade, who says that 167,000,000 bushels of wheat, oats, and grain went eastward last year, and that 105,000,000 of it went by rail, and 62,000,000 bushels went by water. I also have in this report right here the fact that over the Erie Canal (I want to show the immense amount of stuff that is moving from Chicago eastward) from Buffalo to New York 17,824,087 bushels passed last year; 167,000,000 bushels went eastward from Chicago to Buffalo; 62,000,000 bushels going by water and 105,000,000 bushels going by rail.

Mr. CHANEY. Have you the amount of tonnage moving east, east of Chicago, that does not get into Chicago at all?

Mr. GILHAMS. I am unable to get the figures—absolutely unable. I tried to get the tonnage figures. Fort Wayne, of course, has a large shipment. And before I forget it, I want to say to you that at Gary, right on the line of this canal, is going to be located and is building to-day and under construction and now about ready to commence operation one of the greatest steel plants in the world. Seventy-five million dollars have been set aside to build that plant. The freight and the coal that would go over this line, over the Miami and Erie Canal up through this line to that plant alone, would be something enormous, and would wonderfully cheapen the price of it there.

Mr. HARDY. Mr. Gilhams, as a matter connected with this, has it ever occurred to you that by some process all the waterways of the United States have been throttled by unfair railroad competition?

Mr. GILHAMS. I think there is no question about that.

Mr. HARDY. And that in order to initiate water transportation it will be necessary to regulate the railroad discriminations first?

Mr. GILHAMS. That may be very true.

Mr. BURTON. Why?

Mr. HARDY. Because as soon as you dig your canal the railroad throttles it and drives out your water transportation. Like the Erie Canal of New York, it runs into decay; and like the St. Johns River, and hundreds of other rivers, the boats are driven off. Then, finally, money is spent by the Federal or State governments on the waterways, while these railroads cut down rates at water points and destroy the competition. The waterways will sustain themselves if they are allowed to carry the freight.

Mr. GILHAMS. I want to say to the committee, which has been very generous to me and very patient and very kind to let me have this hearing, that I have been unable to obtain some figures that I wanted. I have written to several places, and I have gone to the Census Bureau; but I wanted to find out the amount of tonnage that was carried on the Lakes in boats drawing 14 feet or less. I have been unable to secure the amount of tonnage carried in such boats which would pass through this canal. Last fall I had a document in which I secured those figures, and I lost it. But I remember the proportionate amount, for I incorporated it in a talk at Fort Wayne on this very canal project. The amount of tonnage carried on the Great Lakes in boats of 14-foot draft and less is three-fifths of the total tonnage of those Lakes. That means that if this canal is constructed that tonnage will go on this canal if we construct a 14 or 16 foot canal. That means that it will go immediately; and that means a wonderful reduction in the price of freights. That freight is already prepared to go that way. They do not have to build ships to avail themselves of this canal. That is ready at the present time.

There is another thing about this waterway system. I do not like to dwell on this proposition, but there is one thing that is sure. That is that if we will develop the waterways of our country, we will never have any trouble at all about the watered stock of the railroad corporations; because the waterways of our country are destined to be the true levelers of the real, intrinsic value of transportation companies. It is bound to be that way, because water is the cheapest method of movement. It does not make any difference if the railroad companies water their stock twenty times; they have got to finally deliver freight on the real intrinsic value in those corporations. I therefore think the waterways will be a true leveler and save this great complaint about watered stock that is in railroads now. It will make them come to their true value, and it will not be necessary for us to bring them down.

Now I am going to conclude with just this statement: If you proceed to make this survey now, you will build this canal for one-half the money that you can build it a few years hence. Why? Because if private concerns get control of the water on this line anywhere along not exactly a parallel line, but any part of that line, the loss of the water power, the loss of the privilege of having the first right over the line, and the necessity of buying out these different companies and adjusting the losses to them and equalizing their rights, will put another one hundred millions on top of it. I believe you will agree with me. And so, gentlemen, all I want to say in conclusion is that it seems to me that anyone of these arguments is in itself enough to permit this committee to give a favorable report for a preliminary survey.

Gentlemen, I thank you.

The CHAIRMAN. I want to say to the committee that Mr. Fornes, of New York, who has a resolution pending before our committee for a survey of a ship-canal route from the Detroit River across the State of Michigan to Lake Michigan at a point called Benton Harbor, could not stay to be heard orally; but he left on the table copies of a speech that he has prepared on the subject under date of March 27, which he wanted to have considered as his argument before the committee on this proposition.

ADDRESS OF MR. FORNES.

Mr. Chairman, respectfully referring to the bill introduced by me (H. R. 17417) providing for the survey of a ship canal from Benton Harbor or vicinity, on Lake Michigan, to Toledo, on Lake Erie, I beg to submit the following statement in favor of same:

The cost of transportation is paid by the producer or the consumer. The amount of such cost has a fixed basis, calculated upon distance, time, and safety; hence if these principal elements which establish the rate of transportation can be reduced the producer has the trade advantage, both domestic and foreign, the purchaser the benefit of the lower prices.

The construction of a ship canal of ample dimensions connecting the lower easterly shore of Lake Michigan with Lake Erie at or near Toledo, Ohio, would lessen the shipping distance more than 500 miles between the great and constantly increasing commercial ports of Chicago, Milwaukee, and other shipping points on Lake Michigan and Lake Erie. This route, being a more temperate climate, would lengthen the annual navigation period by fully a month. It would largely decrease the loss through shipwreck in the dangerous early spring and autumn storms, so prevalent in the zone of upper Lake Michigan and Lake Huron. It would avoid the shallow waters of the St. Clair River and Lake St. Clair, also the Detroit River, which are all serious obstacles to navigation. There would be no perceptible current in the canal, the altitude between Lake Michigan and Lake Erie being 14 feet only, or about half an inch a mile. The construction of this proposed canal seems to me most imperative, in order that the vast and constantly increasing commerce between the middle and northwestern fertile sections of our country and the Atlantic ports will not be diverted through the Canadian channels. If not already a settled fact, it is safe to assume that the Dominion of Canada will connect the Georgian Bay with the St. Lawrence River or Lake Ontario by a ship canal. Such a line would attract a large amount of freight from our lakes on account of the shortness of the route. A report made by the underwriters at Chicago January 11, 1908, states:

During the season of navigation on the Lakes, just closed, 38 vessels, with a total tonnage of 27,010 passed out of existence. With the exception of one steamship, all the boats lost were freighters. The aggregate loss in value was \$1,692,000. This does not, of course, include large amounts which were paid out by the underwriters for partial losses. This latter amount doubtless exceeds the aforesaid amount. The season was remarkable for the number of disastrous collisions on the route between Lake Huron and Lake Erie, being 129 out of a total of 534.

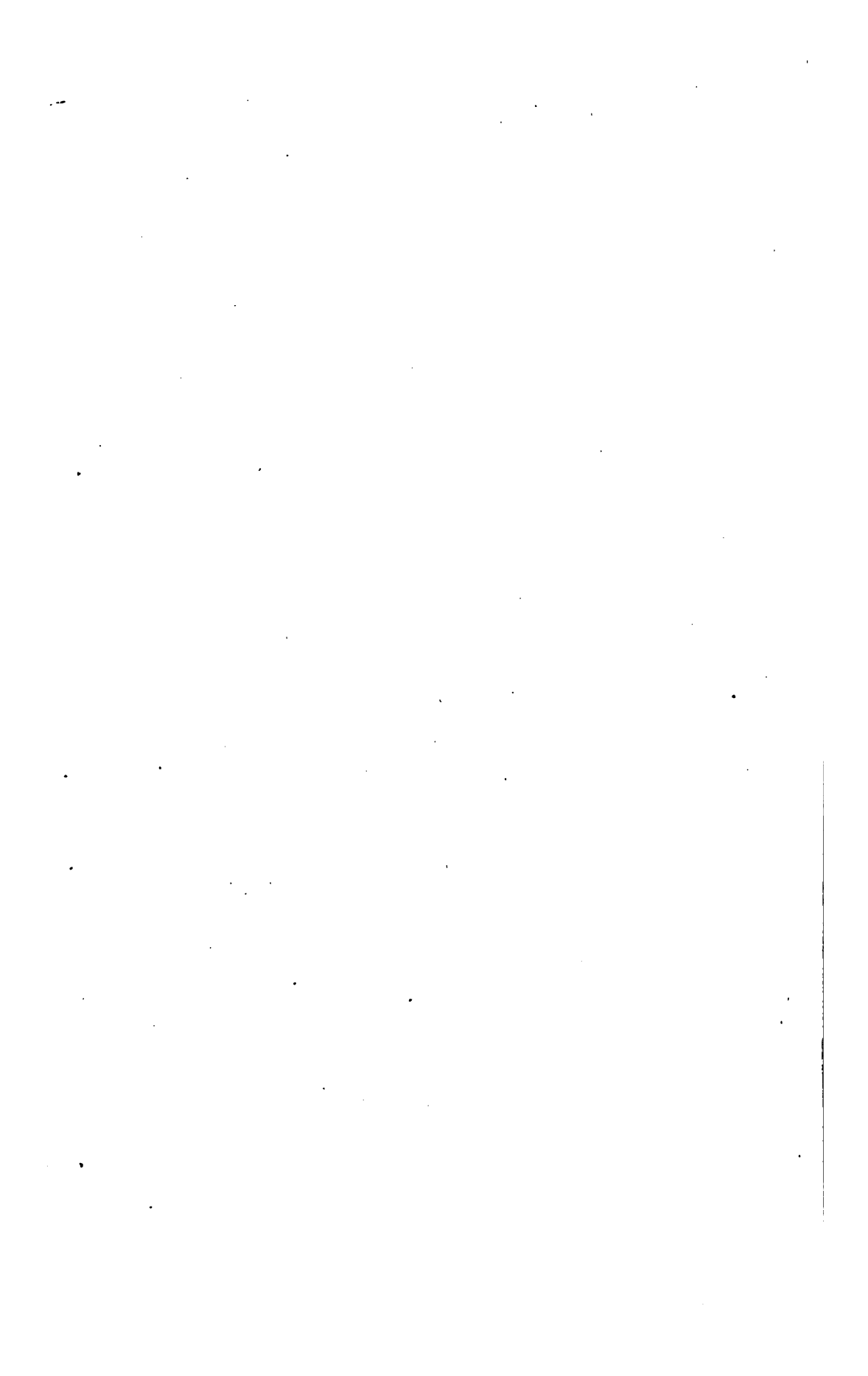
Assuming that the ship canal would lessen this loss by but one-third, equivalent to at least \$1,000,000 a season, not mentioning even the far more valuable loss of human life, this saving alone would more than pay the interest on the capital invested.

During the year 1907, 23,721 vessels passed through the Detroit River with a tonnage of 48,958,328, as compared with 24,077 with a tonnage of 46,072,618, showing that the vessels are growing larger, as well as the business. The merchandise traffic of 1907, through the Detroit River, amounted to 67,292,504 net tons, as compared with 60,578,155 net tons in 1906. Of the western shipments of 20,326,311 tons, 18,427,121 tons were coal from the mines in Pennsylvania, Ohio, and West Virginia. The total lake commerce for 1907 was 10 per cent greater than 1906 and 20 per cent greater than 1905.

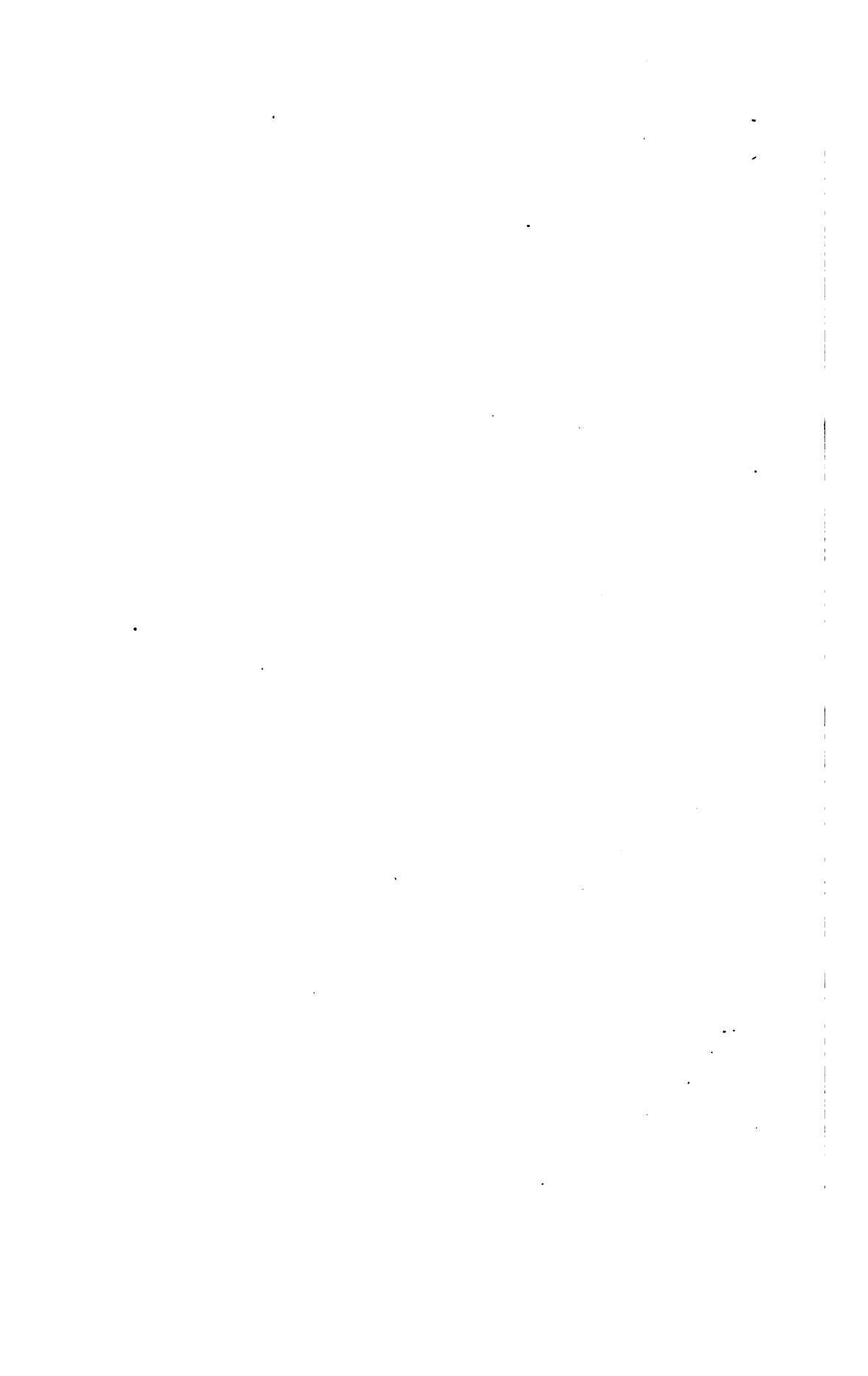
The approximate grain shipments yearly from Lake Michigan ports to Buffalo is reported as 80,000,000 bushels, the average freight charges and insurance being 3 cents a bushel. The ship canal would, owing to the shorter distance, lower the insurance rate, decrease the freight and insurance charges at least one-third, or \$800,000. Again, a longer navigation season would increase the total shipments, hence increase materially the amount saved. Shipments from Lake Erie ports to Lake Michigan ports are reported at about 17,000,000 tons. Applying the same economy on account of the distance and length of season, an additional saving of about \$700,000 is obtained, or a million and a half annually on these two items of freight, or a return of 6 per cent on an outlay of twenty-five million, which, in my judgment, is an amount far in excess of the cost of a canal of ample dimensions. It is admitted that the commerce of our country, both domestic and foreign, urgently demands increased shipping facilities and at a reduced cost. The millions of people of the Middle and Northwestern States will obtain their coal, farm implements, and household goods cheaper; and, likewise, at least 15,000,000 people of the Atlantic Coast States will obtain the necessities of life at less cost, saving the poor breadwinner on the indispensable article, flour, at least 10 cents a barrel, saved because freight is lower and the time in transit lessened.

The Empire State, New York, fully realizing the urgent demand for improved and cheaper freight-carrying methods, appropriated recently over \$100,000,000 for the improvement and enlargement of the Erie Canal. In other words, less than one-eighth of the population of the United States assumed a debt of over one hundred million for the benefit of the nation's commerce in the matter of more extensive exports of our farm and mineral products on account of lowering freight charges against them and improving shipping facilities.

To illustrate the wisdom of these expenditures by the State and the nation, the wonderful increase in lake commerce should clearly suffice, viz., the total shipments by lake in net tons in 1906 were 73,600,648; in 1907, 83,387,319. Coal shipments in 1906 were 17,575,917 tons, and 19,388,414 tons in 1907. Contemplate, if possible, the extent of the lake and canal commerce twenty-five or fifty years hence, when more than the outlay has been liquidated by the economy it established, the property and life saved, and as time goes on, its usefulness and benefits increase, for the more numerous the time-saving methods adopted the greater the ability to meet competition in trade with other nations. The canal toll should not exceed the cost of maintenance and interest on the United States Government bonds, running fifty years, with 2 per cent per annum for the sinking fund, to liquidate the bonds.







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